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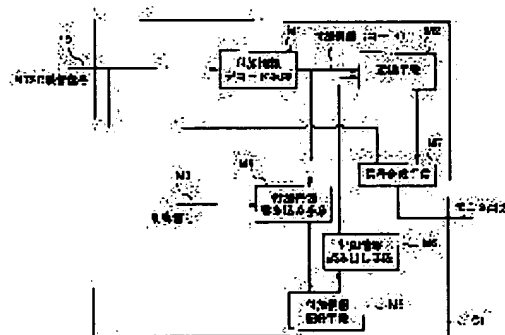
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(54) TELEVISION RECEIVER AND ADDITIONAL INFORMATION TRANSMITTING METHOD

(57)Abstract:

PROBLEM TO BE SOLVED: To transmit the additional information of characters or the like together with a video signal, to prepare a data base by recording this information corresponding to the request of a user and to extend it for home shopping, etc., while effectively utilizing the provided data base.

SOLUTION: The additional information contained in an NTSC video signal 10 is separately extracted from the video signal 10 by an additional information decode means M1 and while using an additional information write switch M4 to be controlled by a prescribed control signal M3, this additional information code is recorded in an additional information recording means M5 so as to be read out as needed. At a converting means M2, the additional information code is converted into a character, etc., and outputted to a signal compositing means M7. At the signal synthesizing means M7, the NTSC video signal 10 and this additional information converted into the character, etc., are composited and outputted.



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CLAIMS

[Claim(s)]

[Claim 1] An additional information decoding means is a television receiver, and carries out a separation extract and output an additional information code from the above-mentioned analog video signal to receive an analog video signal, The additional information record means for recording the additional information code which this additional information decoding means outputs, The additional information write-in switching means which embraces a predetermined control signal, and passes / intercepts the additional information code which the above-mentioned additional information decoding means outputs to the above-mentioned additional information record means, A conversion means to change into an alphabetic character or an image the additional information code read from the additional information code or the above-mentioned additional information record means which the above-mentioned additional information decoding means outputs, The television receiver characterized by having a signal composition means to compound the above-mentioned analog video signal and the additional information changed into the alphabetic character etc. by the above-mentioned conversion means, and to output as a monitor output signal.

[Claim 2] It is the television receiver which receives the television signal by which digital coding was carried out. A digital television signal analysis means to carry out the separation extract of this ** rare ***** additional information from the above-mentioned television signal, and to output as an additional information code when the television signal by which digital coding was carried out [above-mentioned] is analyzed and additional information is included in this television signal, The additional information record means for recording the additional information code which the above-mentioned digital television signal analysis means outputs, The additional information write-in switching means which embraces a predetermined control signal, and passes / intercepts the additional information code which the above-mentioned digital television signal analysis means outputs to the above-mentioned additional information record means, A conversion means to change into an alphabetic character or an image the additional information code read from the additional information code or the above-mentioned additional information record means which the above-mentioned digital television signal analysis means outputs, A video-signal decoding means to decode the television signal by which digital coding was carried out [above-mentioned], and to output a video signal, The television receiver characterized by having a signal composition means to compound the video signal outputted from the above-mentioned video-signal decoding means, and the additional information changed into the alphabetic character etc. by the above-mentioned conversion means, and to output as a monitor output signal.

[Claim 3] It is the television receiver characterized by being what makes a passage condition the above-mentioned additional information write-in switching means only when the predetermined additional information as which the user specified the above-mentioned control signal in the television receiver according to claim 1 or 2 is detected.

[Claim 4] It is the television receiver which receives the television signal by which digital coding was carried out. A digital television signal analysis means to carry out a separation extract and to output this ** rare ***** additional information from the above-mentioned television signal when the television signal by which digital coding was carried out [above-mentioned] is analyzed and additional information is included in this television signal, A picture signal output means to decode the television signal by which digital coding was carried out with reference to the additional information which the above-mentioned digital television signal analysis means outputs, and to output the detailed information relevant to the above-mentioned additional information as a picture signal, The picture signal record means for recording the picture signal which the above-mentioned picture signal output means outputs, The picture signal write-in switching means which embraces a predetermined control signal, and passes / intercepts the picture signal which the above-mentioned picture signal output means outputs to the above-mentioned picture signal record means, A video-signal decoding means to decrypt the television signal by which digital coding was carried out [above-mentioned], and to output a video signal, The television receiver characterized by having a signal composition means to compound the video signal outputted from the above-mentioned video-signal decoding means, and the picture signal read from the picture signal or picture signal record means which the above-mentioned picture signal output means outputs, and to output as a monitor output signal.

[Claim 5] It is the television receiver which a digital television signal analysis means makes additional information the channel number or still picture number in which detailed information is contained in a television receiver according to claim 4 from the television signal by which digital coding was carried out [above-mentioned], and is characterized by being what carries out a separation extract.

[Claim 6] It is the television receiver characterized by being what makes a passage condition the above-mentioned detailed information write-in switching means only when the predetermined additional information as which the user specified the above-mentioned control signal in the television receiver according to claim 4 is detected.

[Claim 7] It is the television receiver which receives the television signal by which digital coding was carried out. A digital television signal analysis means to carry out a separation extract and to output the additional information which shows the location on the screen of the image which analyzes the television signal by which digital coding was carried out [above-mentioned], decodes the television signal by which digital coding was carried out [above-mentioned], and is obtained from the above-mentioned television signal, A means to display an icon on the location specified by the additional information which the above-mentioned digital television signal analysis means on monitor display outputs, a means to choose the above-mentioned icon, and when an icon is chosen The television

receiver characterized by having a picture signal output means to output the detailed information which decodes the television signal by which digital coding was carried out, and is transmitted corresponding to the location of this icon as a picture signal.

[Claim 8] The television receiver characterized by having a detailed information record means to record the above-mentioned detailed information, in a television receiver according to claim 7.

[Claim 9] The additional information transmitting approach which describes the additional information which should be transmitted to the data area for users of the television signal by which digital coding was carried out [above-mentioned] in the additional information transmitting approach of transmitting the television signal which made additional information still more detailed information relevant to it, and carried out multiplex to the television signal by which digital coding was carried out independently with a program or commercials, and is characterized by transmitting.

[Claim 10] The additional information transmitting approach characterized by transmitting the code which shows the object of information offer as the above-mentioned additional information, and the code of the text which shows the information on the object of this information offer, or image information in the additional information transmitting approach according to claim 9.

[Claim 11] The additional information transmitting approach characterized by transmitting the number of the still picture which displays the code which shows the object of information offer as the above-mentioned additional information, the channel number which has transmitted the detailed information on the object of this information offer, or the detailed information on the object of this information offer in the additional information transmitting approach according to claim 9.

[Claim 12] The additional-information transmitting approach characterized by to transmit the number of the code which shows the location on the screen of the image which decodes the television signal concerned by which digital coding was carried out, and is obtained as the above-mentioned additional information in the additional information transmitting approach according to claim 9, and the still picture which displayed the detailed information corresponding to the channel number or this location which has transmitted the detailed information corresponding to this location.

[Claim 13] It is MPEG 2-Video as a television signal by which digital coding was carried out [above-mentioned] in the additional information transmitting approach according to claim 9. The additional information transmitting approach characterized by using a stream.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]**[0001]**

[Field of the Invention] This invention is the television receiver which can carry out collection record of the additional information if needed especially, and MPEG 2-Video about the additional information transmitting approach of transmitting the television signal which made additional information still more detailed information relevant to it, and carried out multiplex independently with a television receiver and a program, or commercials. It is related with the approach of carrying out multiplex [of the additional information] to a stream, and transmitting to it.

[0002]

[Description of the Prior Art] In recent years, in television broadcasting, the so-called multiplex broadcasting which the still more detailed information relevant to it broadcasts independently that the television signal in which multiplex was carried out by VBI multiplex, FM multiplex, etc. as additional information is with the usual program and commercials is put in practical use. According to this method, there is an advantage which can offer the information on many in the same broadcasting hours. However, if it sees from a user side, in order to receive these information, a receiver must be set as the multiplex-broadcasting receive mode, additional information must always be referred to, and the means which serve as a surfeit of information and arrange the information which these-overflows depending on the case are needed.

[0003]

[Problem(s) to be Solved by the Invention] However, since there was no television receiver which can arrange this additional information efficiently conventionally, in a user, the present condition is that set a receiver as the multiplex-broadcasting receive mode, and only the use which displays these additional information on a reception screen, and refers to it is made. Moreover, although it is possible to record on videotape the information received by the multiplex-broadcasting receive mode with a videocassette recorder etc. as it is as an approach of recording the received additional information, in order to record only the additional information needed in this case, when the additional information needed while referring to the additional information displayed on the screen appears, there was a problem that where of very complicated activity of performing image transcription actuation of a videocassette recorder etc. must repeat.

[0004] This invention is made in view of this present condition, and aims at obtaining the television receiver equipped with the function in which the additional information currently broadcast by coincidence can be selected if needed by a user's hope, can be arranged, and can be put in a database and used on the reverse side of the program currently broadcast.

[0005] Moreover, the above-mentioned television receiver is applied to digital broadcast, and it aims at obtaining the television receiver which can choose the icon displayed on the predetermined location on a screen at a user's hope, and can take out only required additional information.

[0006] Moreover, this invention aims at offering the additional information transmitting approach which carries out multiplex [of the additional information] to the television signal by which digital coding was carried out efficiently, and is transmitted to it.

[0007]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, invention concerning claim 1 of this application An additional information decoding means is a television receiver, and carries out a separation extract and output an additional information code from the above-mentioned analog video signal to receive an analog video signal, The additional information record means for recording the additional information code which this additional information decoding means outputs, The additional information write-in switching means which embraces a predetermined control signal, and passes / intercepts the additional information code which the above-mentioned additional information decoding means outputs to the above-mentioned additional information record means, A conversion means to change into an alphabetic character or an image the additional information code read from the additional information code or the above-mentioned additional information record means which the above-mentioned additional information decoding means outputs, It has a signal composition means to compound the above-mentioned analog video signal and the additional information changed into the alphabetic character or the image by the above-mentioned conversion means, and to output as a monitor output signal.

[0008] Moreover, invention concerning claim 2 of this application is a television receiver which receives the television signal by which digital coding was carried out. A digital television signal analysis means to carry out the separation extract of this ** rare ***** additional information from the above-mentioned television signal, and to output as an additional information code when the television signal by which digital coding was carried out [above-mentioned] is analyzed and additional information is included in this television signal, The additional information record means for recording the additional information code which the above-mentioned digital television signal analysis means outputs, The additional information write-in switching means which embraces a predetermined control signal, and passes / intercepts the additional information code which the above-mentioned digital television signal analysis means outputs to the above-mentioned additional information record means, A conversion means to change into an alphabetic character or an

image the additional information code read from the additional information code or the above-mentioned additional information record means which the above-mentioned digital television signal analysis means outputs, A video-signal decoding means to decode the television signal by which digital coding was carried out [above-mentioned], and to output a video signal, It has a signal composition means to compound the video signal outputted from the above-mentioned video-signal decoding means, and the additional information changed into the alphabetic character etc. by the above-mentioned conversion means, and to output as a monitor output signal.

[0009] Moreover, invention concerning claim 3 of this application is made to make a passage condition the above-mentioned additional information write-in switching means, only when the predetermined additional information which the user specified [the above-mentioned control signal] as above-mentioned claims 1 or 2 in the television receiver of a publication is detected.

[0010] Moreover, invention concerning claim 4 of this application is a television receiver which receives the television signal by which digital coding was carried out. A digital television signal analysis means to carry out a separation extract and to output this ** rare ***** additional information from the above-mentioned television signal when the television signal by which digital coding was carried out [above-mentioned] is analyzed and additional information is included in this television signal, A picture signal output means to carry out television signal decoding and to output the detailed information relevant to the above-mentioned additional information by which digital coding was carried out with reference to the additional information which the above-mentioned digital television signal analysis means outputs as a picture signal, The picture signal record means for recording the picture signal which the above-mentioned picture signal output means outputs, The picture signal write-in switching means which embraces a predetermined control signal, and passes / intercepts the picture signal which the above-mentioned picture signal output means outputs to the above-mentioned picture signal record means, A video-signal decoding means to decrypt the television signal by which digital coding was carried out [above-mentioned], and to output a video signal, It has a signal composition means to compound the video signal outputted from the above-mentioned video-signal decoding means, and the picture signal read from the picture signal or picture signal record means which the above-mentioned picture signal output means outputs, and to output as a monitor output signal.

[0011] Moreover, in the television receiver of the claim 4 above-mentioned publication, from the television signal with which digital coding of the above-mentioned digital television signal analysis means was carried out [above-mentioned], invention concerning claim 5 of this application shall make additional information the channel number or still picture number in which detailed information is contained, and shall carry out a separation extract.

[0012] Moreover, in the television receiver of the claim 4 above-mentioned publication, invention concerning claim 6 of this application is made to make a passage condition the above-mentioned detailed information write-in switching means, only when the predetermined additional information which the user specified [the above-mentioned control signal] is detected.

[0013] Moreover, invention concerning claim 7 of this application is a television receiver which receives the television signal by which digital coding was carried out. A digital television signal analysis means to carry out a separation extract and to output the additional information which shows the location on the screen of the image which analyzes the television signal by which digital coding was carried out [above-mentioned], decodes the television signal by which digital coding was carried out [above-mentioned], and is obtained from the above-mentioned television signal, A means to display an icon on the location specified by the additional information which the above-mentioned digital television signal analysis means on monitor display outputs, a means to choose the above-mentioned icon, and when an icon is chosen The television signal by which digital coding was carried out is decoded, and it has a picture signal output means to output the detailed information transmitted corresponding to the location of this icon as a picture signal.

[0014] Moreover, invention concerning claim 8 of this application is equipped with a detailed information record means to record the above-mentioned detailed information, in the television receiver of the claim 7 above-mentioned publication.

[0015] Moreover, invention concerning claim 9 of this application describes the additional information which should be transmitted to the data area for users of the television signal by which digital coding was carried out [above-mentioned], and it is made to transmit in the additional information transmitting approach of transmitting the television signal which made additional information still more detailed information relevant to it, and carried out multiplex to the television signal by which digital coding was carried out independently with a program or commercials.

[0016] Moreover, invention concerning claim 10 of this application transmits the code which shows the object of information offer as the above-mentioned additional information, and the code of the text which shows the information on the object of this information offer, or image information in the additional information transmitting approach of the claim 9 above-mentioned publication.

[0017] Moreover, invention concerning claim 11 of this application transmits the number of the still picture which displays the code which shows the object of information offer as the above-mentioned additional information, the channel number which has transmitted the detailed information on the object of this information offer, or the detailed information on the object of this information offer in the additional information transmitting approach of the claim 9 above-mentioned publication.

[0018] Moreover, invention concerning claim 12 of this application transmits the number of the code which shows the location on the screen of the image which decodes the television signal concerned by which digital coding was carried out, and is obtained as the above-mentioned additional information, and the still picture which displayed the detailed information corresponding to the channel number or this location which has transmitted the detailed information corresponding to this location in the additional-information transmitting approach of the claim 9 above-mentioned publication.

[0019] Moreover, invention concerning claim 13 of this application is MPEG 2-Video as a television signal by which digital coding was carried out [above-mentioned] in the additional information transmitting approach of the claim 9 above-mentioned publication. A stream is used.

[0020]

[Embodiment of the Invention]

The television receiver in the gestalt 1 of operation of the gestalt 1. invention in this application of operation In the television receiver which receives an NTSC (National Television System Committee) video signal (10) as shown in drawing 1 An additional information decoding means to carry out a separation extract and to output an additional information code from the above-mentioned NTSC video

signal (M1), The additional information record means for recording the additional information code which this additional information decoding means outputs (M5), The additional information write-in switching means which embraces a predetermined control signal (M3), and passes / intercepts the additional information code which the above-mentioned additional information decoding means (M1) outputs to the above-mentioned additional information record means (M5) (M4), A conversion means to change into an alphabetic character or an image the additional information code read from the additional information code or the above-mentioned additional information record means (M5) which the above-mentioned additional information decoding means (M1) outputs (M2), It has a signal composition means (M7) to compound the above-mentioned NTSC video signal and the additional information changed into the alphabetic character or the image by the above-mentioned conversion means (M2), and to output as a monitor output signal. The television receiver by the gestalt 1 of this operation by this configuration with the usual program and commercials From the television signal with which multiplex [of the still more detailed information relevant to it] was independently carried out as additional information, required information can be chosen and recorded [collect and] and this additional information collected and recorded can be variously used as a database.

[0021] Here, the record demand signal which requires directly that a user should record additional information from the exterior as a control signal (M3) can be used. Moreover, it is possible to hold the code (keyword) which shows the additional information which desires what a user records, to establish a code comparison means to output the signal which makes a passage condition an additional-information write-in switching means (M4), when the additional-information code which an additional-information decoding means (M1) outputs has this keyword, and to also consider as the configuration using the output of this code comparison means as a control signal (M3). Only the additional information for which it asks after fixed time amount progress can be accumulated in an additional information record means (M5), without requiring directly that a user should record additional information one by one from the exterior, if the keyword is beforehand set up by establishing such a code comparison means.

[0022] The television receiver in the gestalt 2 of operation of the gestalt 2. invention in this application of operation In the television receiver which receives the video signal 20 by which digital coding was carried out as shown in drawing 2 A digital television signal analysis means to carry out the separation extract of this ** rare ***** additional information from the above-mentioned video signal, and to output as an additional information code when the video signal 20 by which digital coding was carried out [above-mentioned] is analyzed and additional information is included in this video signal (M8), The additional information record means for recording the additional information code which the above-mentioned digital television signal analysis means (M8) outputs (M5), The additional information write-in switching means which embraces a predetermined control signal (M3), and passes / intercepts the additional information code which the above-mentioned digital television signal analysis means (M8) outputs to the above-mentioned additional information record means (M5) (M4), A conversion means to change into an alphabetic character etc. the additional information code read from the additional information code or the above-mentioned additional information record means (M5) which the above-mentioned digital television signal analysis means (M8) outputs (M10), A video-signal decoding means to decrypt the video signal by which digital coding was carried out [above-mentioned], and to output a video signal (M9), It has a signal composition means (M7) to compound the video signal outputted from the above-mentioned video-signal decoding means (M9), and the additional information changed into the alphabetic character etc. by the above-mentioned conversion means (M10), and to output as a monitor output signal. The television receiver by the gestalt 2 of this operation by this configuration with the usual program and commercials From the television signal with which multiplex [of the still more detailed information relevant to it] was independently carried out as additional information, required information can be chosen and recorded [collect and] and this additional information collected and recorded can be variously used as a database.

[0023] Here, as a control signal (M3), the record demand signal which requires directly that a user should record additional information from the exterior can be used like the television receiver in the gestalt 1 of the above-mentioned implementation. Moreover, it is possible to hold the code (keyword) which shows the additional information which desires what a user records, to establish a code comparison means to output the signal which makes a passage condition an additional-information write-in switching means (M4), when the additional-information code which an additional-information decoding means outputs has this keyword, and to also consider as the configuration using the output of this code comparison means as a control signal (M3). Only the additional information for which it asks after fixed time amount progress can be accumulated in an additional information record means (M5), without requiring directly that a user should record additional information one by one from the exterior, if the keyword is beforehand set up by establishing such a code comparison means.

[0024]

[Example]

The television receiver by the example 1 of the invention in this application based on the gestalt 1 of the above-mentioned implementation is explained about drawing 3 below example 1. In drawing 3 , when 11 wants to display additional information, the additional information display demand signal which a user inputs, and 12 are the record demand signals from the user for recording the additional information currently displayed, and this record demand signal 12 is equivalent to the control signal M3 shown in drawing 1 . 13 is a playback demand signal from the user for reproducing the recorded additional information. Moreover, 100 is a Rhine 21 analysis means to detect the 21st line, in order to judge [whether above-mentioned NTSC signal 10 is considered as an input, and additional information is transmitted, and]. 101 is an AND circuit which considers as an input the above-mentioned additional information display demand signal 11 and the signal 18 which shows that it is in the condition that additional information is transmitted with the Rhine 21 analysis means 100, and is for turning on/off controlling an additional information decoding means 102 to mention later based on these signals. 102 is a thing equivalent to the additional information decoding means M1 shown in drawing 1 . When it will be in an ON state with the control signal 15 which receives the video signal 14 which carried out through [of the above-mentioned analysis means 100], and is outputted from above-mentioned AND circuit 101 An additional information decoding means to carry out a separation extract and to output the additional information included in a video signal 14, and 103 are the things equivalent to the conversion means M2 of drawing 1 . The code / alphabetic character, and an image transformation means to change the additional information codes 16a and 16b into an alphabetic character or an image, A frame memory for 104 to accumulate temporarily the additional information changed

into the alphabetic character etc. and 105 are signal composition means which compound the NTSC video signal 10 and the additional information signal accumulated in the above-mentioned frame memory 104, and are made into the monitor output signal 17. These frame memories 104 and the signal composition means 105 are equivalent to the signal composition means M7 shown in drawing 1. 108 is record media for recording and accumulating the additional information code which is equivalent to the additional information record means M5 shown in drawing 1, and the additional information decoding means 102 outputted, such as HDD (hard disk driver). Moreover, 106 is equivalent to the additional information write-in switching means M4 which is the switch to permit and shows recording additional information code 16a which the additional information decoding means 102 outputs on HDD108 for record to drawing 1, when the record demand signal 12 is inputted. 107 is a switch for reading, when the additional information recorded on HDD108 for record is inputted into the playback demand signal 13, and outputting to a code / alphabetic character, and the image transformation means 103.

[0025] Next, actuation of the television receiver of the above-mentioned example 1 is explained. In order to notify that it is additional information transmission as an NTSC video signal 10 to receive, it is drawing 4 (a). Multiplex is performed using a vertical-retrace-line period (VBI=Vertical Blanking Interval), the wave which tells that a bar code is sent to the 21st line next is established, and a character code (for example, JIS code) is sent in other Rhine, for example, the 22nd line, so that it may be shown (refer to drawing 4 (b)). Since the color subcarrier frequency fsc is 3.58MHz in NTSC system when for example, the above-mentioned pulse width T is made into $T = 1/(4xfsc)$ here, pulse width T is set to 70ns. Therefore, although it is 910 dots in one line, when the part already used by the horizontal synchronizing pulse or the color burst is here and this is removed, generally the number of the effective length who can use it for a signal is 768. If the kanji is used, it will be 16 bits (dot) to coding of one character. Since it is the part need, $768 / 16 = 48$ alphabetic transmit can be carried out per line after all.

[0026] In addition, although it is possible to replace with an alphabetic character here and to transmit graphic form information in a bit map, there is a transmission capacity-limitation in NTSC system. For example, the 2048 field is needed, if it is needed $256 \times 256 / 32 = 2048$ (Rhine) and one line is used in the 1 field, in order to be able to send the data of 768 (dot) / $24 = 32$ (dot) part by one line and to transmit the bit map of the size of 256×256 , if 24 bits of image data shall be sent in order of Red/Blue/Green in 8-bit resolution. since it is generally 60 fields / second — transmission of this bit map — $2048/60 =$ — there is a limit in the magnitude of the image data which become this thing for 34 seconds, therefore can be transmitted practical.

[0027] Then, if both signals 18 which show that it is [additional information display demand signal 11 and additional information] under transmission are inputted into AND circuit 101, the additional information decoding means 102 will be in an ON state, as mentioned above, from a video signal, will carry out a separation extract and will output the additional information code of 48 characters per line contained in a video signal 14. When the record demand signal 12 is inputted, while a switch 106 turns on this additional information code 16a and it is recorded on HDD108 for record, it is changed into an alphabetic character by the code / alphabetic character, and the image transformation means 103, and the alphabetic data for one screen etc. is accumulated in a frame memory 104. With the signal composition means 105, the NTSC video signal 10, the alphabetic data for one screen accumulated in the above-mentioned frame memory 104, etc. are compounded, and the monitor output signal 17 is outputted.

[0028] On the other hand, the additional information code accumulated in HDD108 for record by above-mentioned actuation When the playback demand signal 13 from a user is inputted, a switch 107 turns on and data 16b of additional information is read from HDD108 for record. After being changed into text by the code / alphabetic character, and the image transformation means 103 and accumulating the information for one screen by the frame memory 104, it is outputted as a monitor output signal 17 through the signal composition means 105. When it compounds with the video signal under current reception, and alphabetic data is displayed, when the NTSC video signal 10 is inputted at this time, and the NTSC video signal 10 is not received, only text is displayed on a screen. The approach of, carrying out 2 screen separation of the composite method [alphabetic data / based on the above-mentioned signal composition means 105 / the video signal and alphabetic data] for example, and it displaying is mentioned.

[0029] In addition, the bar code which a user wishes is reserved beforehand, and only when this is in agreement as compared with the bar code transmitted by the 21st line, you may make it record the additional information concerned at HDD108 for record, for example in the case of commercials, although the above explanation explained the case where additional information 16a coded to the timing into which the record demand signal 11 from a user was inputted was recorded. By doing in this way, the database with which the information which a user considers as a request automatically was accumulated comes to be created after fixed time amount.

[0030] Thus, according to this example 1, it sets to the television receiver of NTSC system. The separation extract of the additional information transmitted is carried out using the additional information decoding means 102 with the usual image. Since the additional information by which record was carried out [above-mentioned] was taken out and an indication was given possible with the playback demand signal 13 from a user while recording this on HDD108 for record according to the demand of a user, the additional information displayed on real time is catalogized. By the way, it takes out, and can refer to, and there is effectiveness which is the need always that a deployment of additional information can be aimed at. Moreover, if only the additional information considered as a request is chosen, additional information is moreover catalogized automatically and it sees from a user side by reserving beforehand the class of additional information for which a user wishes, while not knowing after fixed time amount, additional information can be collected, and efficient information gathering is possible.

[0031] The television receiver by the example 2 of the invention in this application based on the gestalt 2 of example 2., next the above-mentioned implementation is explained about drawing 5. For this example 2, the television signal by which digital coding was carried out is MPEG 2-Video. It is the television receiver which is a stream. It is equivalent to the digital television signal analysis means M8 which shows 200 in drawing 2 in drawing 5, and is MPEG 2-Video. It is a stream analysis means to consider a stream 20 as an input, to carry out the separation extract of the additional information codes, such as an alphabetic character, from this stream 20, and to output. When this stream analysis means 200 receives the additional information display demand signal 11 from a user, ON / off actuation is controlled. 201 is equivalent to the video-signal decoding means M9 shown in drawing 2, and is the above-mentioned MPEG 2-Video. MPEG 2-Video which considers a stream 20 as an input and changes the this encoded image information into the usual video signal 14 It is a decoder. Other parts are the same as the part which attached the same sign in the example 1 shown in drawing 3.

[0032] Hereafter, actuation of the television receiver of the above-mentioned example 2 is explained. MPEG 2-Video which receives When image information, text, etc. are stored in the stream 20 in the predetermined format and the display demand signal 11 from a user is inputted, the stream analysis means 200 will be in an ON state, and it is the above-mentioned MPEG 2-Video. Additional information, such as an alphabetic character contained in a stream 20, is taken out, and this is outputted as signal 16a. The above-mentioned additional information is within MPEG specification. How to use a User Data (data for users) field (8 bits), defining it uniquely can be considered. That is, it is the identifier of being additional information '0000 0100' It carries out and is a certain bar code '0110 0110 1111 1111 0000 0000' If it carries out, a definition will be given as follows.

0000 0000 0000 0000 0000 0000 1011 0010 — User Data Start Code (0xB2) 0000 0100 — that it is additional information shown identifier 0110 0110 — 8 bits of the beginning of the 24 bits of the bar codes 1111 1111 The following 8 bits of 24 bits of — bar codes 0000 0000 8 bits of the last of the 24 bits of the — bar codes 0011 1011 — one kanji 8 bits of high orders of the shown 16 bits 1100 1101 — 8 bits of low order of the 16 bits which shows one kanji — — — — 0000 0000 0000 0000 0000 0001 — the user end of data A stream current by receiving the stream of the above formats with the code, therefore the above-mentioned stream analysis means 200 which are shown is additional information ('0000 0100'). It is discriminable that it is a thing about a bar code ('0100 0110 1111 1111 0000 0000'). In addition, sending it can be continued without limit until alphabetic data sends the code which shows the user end of data.

[0033] On the other hand, it is MPEG 2-Video. MPEG 2-Video inputted in the decoder 201 The image information included in a stream 20 is changed into a video signal 14, and it outputs to the signal composition means 105. Conversion to an alphabetic character from a code is performed by a code / transliteration means 103, and additional information code 16a outputted from the above-mentioned stream analysis means 200 is accumulated in a frame memory as data for one screen. If the record demand signal 12 from a user is inputted at this time, a switch 106 will turn on and additional information code 16a outputted from the stream analysis means 200 will be written in HDD108 for record. The additional information accumulated in the above-mentioned frame memory 104 is MPEG 2-Video by the signal composition means 105. It is compounded with the video signal 104 outputted from the decoder 201, and becomes the monitor output signal 17.

[0034] Moreover, if the playback demand signal 13 from a user is inputted, a switch 107 will turn on and it will be read from HDD108 for record, and it becomes the monitor output signal 17 through a code / transliteration means 103, a frame memory 104, and the signal composition means 105 like the case of the above-mentioned example 1, for example, 2 screen separation etc. is carried out, and the additional information accumulated in above-mentioned HDD108 for record is displayed on a monitor.

[0035] In addition, MPEG 2-Video which reserved beforehand the bar code which a user wishes like the above-mentioned example 1 also in this example in the case of commercials, and has been transmitted with the stream analysis means 200 Only when this is in agreement as compared with the bar code contained in a stream, you may make it record the additional information concerned on HDD108 for record. By doing in this way, the database with which the information which a user considers as a request automatically was accumulated comes to be created after fixed time amount.

[0036] Thus, according to this operation 2, it is MPEG 2-Video. In the digital-type television receiver using a method With the usual image, analyze the additional information transmitted with the stream analysis means 200, and only additional information code 16a is taken out. Since the additional information by which record was carried out [above-mentioned] was taken out and an indication was given possible with the playback demand signal 13 from a user while recording this on HDD108 for record according to the demand of a user, the additional information displayed on real time is catalogized. By the way, it takes out, and can refer to, and there is effectiveness which is the need always that a deployment of additional information can be aimed at. Moreover, if only the additional information considered as a request is chosen, additional information is moreover catalogized automatically and it sees from a user side by reserving beforehand the class of additional information for which a user wishes, while not knowing after fixed time amount, additional information can be collected, and efficient information gathering is possible.

[0037] The television receiver by the example 3 of the invention in this application based on the gestalt 2 of example 3., next the above-mentioned implementation is explained about drawing 6 . Setting to drawing 6 , 109 is MPEG 2-Video by the stream analysis means 200. The code / an image-transformation means of changing into the usual picture signal the additional information (image data displayed in bit map code) by which the separation extract was carried out from a stream 20, and 300 are removable record media, such as a floppy disk which can exchange data between HDD108 for storage, and other parts are the same as the part which attached the same sign in the example 2 shown in drawing 5 .

[0038] Hereafter, actuation of the television receiver of the above-mentioned example 3 is explained. Although record of an additional information code and fundamental actuation of read-out are the same as that of the television receiver of the above-mentioned example 2, in order to treat not an alphabetic character but image data as additional information here, additional information serves as a bit map format, and in order to compound with a video signal 14 with the signal composition means 105, the points constituted so that data may be changed into an image from a code with a code / image transformation means 109 differ. Thus, MPEG 2-Video As additional information, besides text, what has comparatively large amount of information, such as graphic form information, can be dealt with as additional information, and can extend the range of multiplexing of broadcast by using a format.

[0039] Moreover, although a user can use the additional information accumulated in HDD108 for record by reading this and usually displaying on a monitor, the removable record medium 300 for example, in exchanging the 3rd person and required information Choose what is considered as a request among the additional information accumulated in this HDD for record, and it takes out outside. When it writes out to the removable record medium 300 and the partner who received this writes the additional information recorded on this record medium 300 in his HDD108 for record The additional information which the third person created can be incorporated in its own database, and it is effective in being useful to information interchange etc. In addition, such a removable record medium 300 can apply this also to the above-mentioned example 1 and an example 2, and does the same effectiveness so.

[0040] Example 4., next the television receiver by the example 4 of the invention in this application are explained about drawing 7 . MPEG 2-Video which transmits in the above-mentioned example 2 and the example 3 Inside of MPEG specification of a stream 20 Although the additional information itself was described to the User Data field, the points he is trying to describe only the channel

number or still picture number from which detailed information appears in the User Data field in this example 4 as additional information differ greatly compared with the above-mentioned example 2 and an example 3. That is, it is MPEG 2-Video which considered as the input the additional information (channel number or still picture number) signal 19 from which 400 was taken out with the stream analysis means 200 in drawing 7, and was specified by additional information. MPEG 2-Video which decodes the still picture specified by the channel of a stream 20, or additional information It is a still picture decoder. In this example 4, it is based on additional information, and is MPEG 2-Video. It is MPEG 2-Video at the still picture decoder 400. A stream 20 is decoded, and it outputs as a picture signal, and is considering as the configuration which records this picture signal on HDD108 for record.

[0041] Hereafter, actuation of the television receiver of the above-mentioned example 4 is explained. With the stream analysis means 200, it is MPEG 2-Video. The channel number (or number of a still picture) in which the code which identifies that it is the additional information included in a stream 20, a bar code, and detailed information appear is detected, and it is latter MPEG 2-Video. In a still picture decoder, the channel (image) concerned is decoded according to the channel number (still picture number) following the channel by which detection was carried out [above-mentioned]. The above-mentioned additional information is within MPEG specification. How to use a User Data (data for users) field (8 bits), defining it uniquely can be considered. That is, it is the identifier of being additional information '0000 0100' It carries out and is a certain bar code '0110 0110 1111 1111 0000 0000' If it carries out, a definition will be given as follows.

0000 0000 0000 0000 0000 0000 1011 0010 — User Data Start Code (0xB2) 0000 0100 — that it is additional information shown identifier 0110 0110 — 8 bits of the beginning of the 24 bits of the bar codes 1111 1111 The following 8 bits of 24 bits of — bar codes 0000 0000 8 bits of the last of the 24 bits of the — bar codes 0011 1011 — Channel number in which detailed information appears (or still picture number)

1100 1101 — Channel Number in which Detailed Information Appears (or Still Picture Number)

— — — — 0000 0000 0000 0000 0000 0001 — A stream current by receiving the stream of the above formats with the code, therefore the above-mentioned stream analysis means 200 which show the user end of data is additional information ('0000 0100'). It is discriminable that it is a thing about a bar code ('0100 0110 1111 1111 0000 0000'). It is based on the information on the continuing channel number or a still picture number, and is MPEG 2-Video at the MPEG 2-Video still picture decoder 400. The picture signal which is detailed information is acquired by decoding a stream. The acquired picture signal is memorized by the frame memory 104. At this time, if the record demand signal 12 from a user is inputted, a switch 106 will turn on and the picture signal which is the detailed information concerned will be recorded on HDD108 for record. On the other hand, it is MPEG 2-Video. A decoder 201 is inputted MPEG 2-Video. The animation of a channel including the above-mentioned additional information of a stream 20 is changed into a video signal 14 by the usual decoding actuation, and it outputs to the signal composition means 105. And a video signal 14 is MPEG 2-Video memorized by the frame memory 104. It is compounded with the picture signal decoded by the still picture decoder 400, and is outputted as a monitor signal 17. 2 screen separation and an overlap format as well as [as a synthetic approach] each above-mentioned example can be considered. Moreover, if a switch 107 turns on, it is called to a frame memory 104, it becomes data for one screen here and there is a video signal under current reception when the playback demand signal 13 from a user is inputted, the picture signal accumulated in HDD108 for record as mentioned above will be compounded with it with the signal composition means 105, and will be outputted as a monitor signal 17.

[0042] Thus, according to this example 4, it is MPEG 2-Video. Inside of MPEG specification of a stream 20 The channel number with which detailed information appears in the User Data field, or the number of a still picture should be described as additional information. It is based on this additional information and is MPEG 2-Video. It is MPEG 2-Video at the still picture decoder 400. A stream 20 is decoded. The picture signal and MPEG 2-Video which were obtained It is MPEG 2-Video at a decoder 201. Since the video signal 14 which decoded the stream 20 and was acquired was compounded with the signal composition means 105, additional information data are manageable in package.

[0043] In addition, it is MPEG 2-Video about additional information. Instead of a layer describing, it is MPEG 2-Systems. The description which can be set may be defined similarly separately and the same effectiveness is completely acquired. Hereafter, this is explained using drawing 8. The stream analysis means 200 is MPEG 2-Systems in which video, an audio, and data were intermingled in drawing 8. The stream of the video to which the user is viewing and listening now is supplied to the decoder 203 of Maine in response to a bit stream 20 (system stream). Moreover, this MPEG 2-Systems Addition image data incidental to the bit stream are supplied to the decoder 202 for additional information (however, only when this exists).

[0044] Each decoder 201,202 decodes each inputted stream, and changes it into a video signal. It is uniquely defined by the custom field in conformity with the functor specified by MPEG 2-System which stream is the additional information of the video stream to which the viewer is viewing and listening now. Here, additional information does not need to be a still picture. In digital transmission, transmission of an animation is also especially easy.

[0045] If there is record demand 12 from a user, it will record on HDD108 for record with a stream. Since it becomes possible to record for information [being compressed] at this time, the capacity of a record medium can be used effectively.

[0046] And if the playback demand signal 13 from a user is inputted, only the additional information stream read from HDD108 for record is supplied to the decoder 202 for additional information, and the additional information decoded and this decoded by this decoder 202 by 202 will be compounded by the selector 204 with the decoding result (output of the decoder 203 for the Maine images) and the signal composition means 105 of the Maine image, and will be outputted as a monitor output signal 17. As [both] an output form on this monitor, a right-and-left 2 screen-separation format, a picture Inn picture format, etc. which are an animation can be considered. In addition, MPEG 2-System and MPEG 2-Video which have been used in the above example It is the specification specified as an international standard.

[0047] Moreover, you may make it it not only to display the data stored in each above-mentioned example on the Braun tube, but output them to airline printers, such as a printer.

[0048] Furthermore, each above-mentioned example is made into a two-way communication format, and you may make it make it correspond to home shopping (for example, MTS:Mutual Text System) based on the stored data.

[0049] Moreover, although only additional information was recorded on HDD108 for record, you may make it record a video signal with additional information in each above-mentioned example. In this case, since timing superimposed on additional information is performed later than that video signal, in order to record a video signal based on additional information, it is necessary to form the image memory which has the capacity which can accumulate the video signal for about 15 seconds.

[0050] Furthermore, although the channel number or still picture number of the contents of additional information or additional information was recorded in the above-mentioned example 2 thru/or the example 4, it is good by displaying an icon on a screen and choosing the icon also as a configuration which acquires detailed information.

[0051] By namely, the thing which it is related at the time of transmission and done at it for the definition of the location and detailed information on the object which has detailed information, for example, the screen where goods are displayed in a receiving side, an icon is displayed on the location on the screen where the goods which have the above-mentioned detailed information are displayed according to assignment of a user. According to the icon selection by the user, the detailed information corresponding to the location of the selected icon can be acquired by decoding another channel or a still picture, this can be displayed on a screen, and it can record if needed.

[0052] How to use the data area for users within MPEG specification as an example of description of additional information, defining it uniquely can be considered. That is, it is the identifier of being additional information '0000 0100' It carries out and is a certain bar code '0110 0110 1111 1111 0000 0000' If it carries out, a definition will be given as follows.

0000 0000 0000 0000 0000 0000 1011 0010 — User Data Start Code (0XB2) 0000 0100 — Identifier Which Shows that it is Additional Information 0000 0000 — X Coordinate 8 bits of high orders of the 16 bits to express 1000 0000 — 8 bits of low order of the 16 bits expressing X coordinate 0000 0001 — 8 bits of high orders of the 16 bits expressing Y coordinate 0000 0000 — Y coordinate 8 bits of low order of the 16 bits to express 0110 0110 — 8 bits of the beginning of the 24 bits of the bar codes 1111 1111 The following 8 bits of 24 bits of — bar codes 0000 0000 8 bits of the last of the 24 bits of the — bar codes 0011 1011 — Channel number in which detailed information appears (or still picture number)

1100 1101 — Channel Number in which Detailed Information Appears (or Still Picture Number)

— — — — 0000 0000 0000 0000 0000 0001 It is based on such additional information. the code which shows — user end of data — When the decoder of a receiving side displays an icon on for example, (128,256) the coordinate location on the described screen, and a coordinate location according to a demand of a user and a user chooses this icon with remote control etc. The channel in which detailed information appears, or a still picture can be decoded, and detailed information, such as goods currently displayed on the coordinate location, can be displayed on a screen. And it is also possible to accept the need as well as each above-mentioned example, and to record and print. Moreover, also in this example, in description of additional information, even if it uses the custom field of MPEG 2-System, the completely same effectiveness is acquired.

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TECHNICAL FIELD

[Field of the Invention] This invention is the television receiver which can carry out collection record of the additional information if needed especially, and MPEG 2-Video about the additional information transmitting approach of transmitting the television signal which made additional information still more detailed information relevant to it, and carried out multiplex independently with a television receiver and a program, or commercials. It is related with the approach of carrying out multiplex [of the additional information] to a stream, and transmitting to it.

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PRIOR ART

[Description of the Prior Art] In recent years, in television broadcasting, the so-called multiplex broadcasting which the still more detailed information relevant to it broadcasts independently that the television signal in which multiplex was carried out by VBI multiplex, FM multiplex, etc. as additional information is with the usual program and commercials is put in practical use. According to this method, there is an advantage which can offer the information on many in the same broadcasting hours. However, if it sees from a user side, in order to receive these information, a receiver must be set as the multiplex-broadcasting receive mode, additional information must always be referred to, and the means which serve as a surfeit of information and arrange the information which these-overflows depending on the case are needed.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] However, since there was no television receiver which can arrange this additional information efficiently conventionally, in a user, the present condition is that set a receiver as the multiplex-broadcasting receive mode, and only the use which displays these additional information on a reception screen, and refers to it is made. Moreover, although it is possible to record on videotape the information received by the multiplex-broadcasting receive mode with a videocassette recorder etc. as it is as an approach of recording the received additional information, in order to record only the additional information needed in this case, when the additional information needed while referring to the additional information displayed on the screen appears, there was a problem that where of very complicated activity of performing image transcription actuation of a videocassette recorder etc. must repeat.

[0004] This invention is made in view of this present condition, and aims at obtaining the television receiver equipped with the function in which the additional information currently broadcast by coincidence can be selected if needed by a user's hope, can be arranged, and can be put in a database and used on the reverse side of the program currently broadcast.

[0005] Moreover, the above-mentioned television receiver is applied to digital broadcast, and it aims at obtaining the television receiver which can choose the icon displayed on the predetermined location on a screen at a user's hope, and can take out only required additional information.

[0006] Moreover, this invention aims at offering the additional information transmitting approach which carries out multiplex [of the additional information] to the television signal by which digital coding was carried out efficiently, and is transmitted to it.

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MEANS

[Means for Solving the Problem] In order to attain the above-mentioned purpose, invention concerning claim 1 of this application An additional information decoding means is a television receiver, and carries out a separation extract and output an additional information code from the above-mentioned analog video signal to receive an analog video signal, The additional information record means for recording the additional information code which this additional information decoding means outputs, The additional information write-in switching means which embraces a predetermined control signal, and passes / intercepts the additional information code which the above-mentioned additional information decoding means outputs to the above-mentioned additional information record means, A conversion means to change into an alphabetic character or an image the additional information code read from the additional information code or the above-mentioned additional information record means which the above-mentioned additional information decoding means outputs, It has a signal composition means to compound the above-mentioned analog video signal and the additional information changed into the alphabetic character or the image by the above-mentioned conversion means, and to output as a monitor output signal.

[0008] Moreover, invention concerning claim 2 of this application is a television receiver which receives the television signal by which digital coding was carried out. A digital television signal analysis means to carry out the separation extract of this ** rare ***** additional information from the above-mentioned television signal, and to output as an additional information code when the television signal by which digital coding was carried out [above-mentioned] is analyzed and additional information is included in this television signal, The additional information record means for recording the additional information code which the above-mentioned digital television signal analysis means outputs, The additional information write-in switching means which embraces a predetermined control signal, and passes / intercepts the additional information code which the above-mentioned digital television signal analysis means outputs to the above-mentioned additional information record means, A conversion means to change into an alphabetic character or an image the additional information code read from the additional information code or the above-mentioned additional information record means which the above-mentioned digital television signal analysis means outputs, A video-signal decoding means to decode the television signal by which digital coding was carried out [above-mentioned], and to output a video signal, It has a signal composition means to compound the video signal outputted from the above-mentioned video-signal decoding means, and the additional information changed into the alphabetic character etc. by the above-mentioned conversion means, and to output as a monitor output signal.

[0009] Moreover, invention concerning claim 3 of this application is made to make a passage condition the above-mentioned additional information write-in switching means, only when the predetermined additional information which the user specified [the above-mentioned control signal] as above-mentioned claims 1 or 2 in the television receiver of a publication is detected.

[0010] Moreover, invention concerning claim 4 of this application is a television receiver which receives the television signal by which digital coding was carried out. A digital television signal analysis means to carry out a separation extract and to output this ** rare ***** additional information from the above-mentioned television signal when the television signal by which digital coding was carried out [above-mentioned] is analyzed and additional information is included in this television signal, A picture signal output means to carry out television signal decoding and to output the detailed information relevant to the above-mentioned additional information by which digital coding was carried out with reference to the additional information which the above-mentioned digital television signal analysis means outputs as a picture signal, The picture signal record means for recording the picture signal which the above-mentioned picture signal output means outputs, The picture signal write-in switching means which embraces a predetermined control signal, and passes / intercepts the picture signal which the above-mentioned picture signal output means outputs to the above-mentioned picture signal record means, A video-signal decoding means to decrypt the television signal by which digital coding was carried out [above-mentioned], and to output a video signal, It has a signal composition means to compound the video signal outputted from the above-mentioned video-signal decoding means, and the picture signal read from the picture signal or picture signal record means which the above-mentioned picture signal output means outputs, and to output as a monitor output signal.

[0011] Moreover, in the television receiver of the claim 4 above-mentioned publication, from the television signal with which digital coding of the above-mentioned digital television signal analysis means was carried out [above-mentioned], invention concerning claim 5 of this application shall make additional information the channel number or still picture number in which detailed information is contained, and shall carry out a separation extract.

[0012] Moreover, in the television receiver of the claim 4 above-mentioned publication, invention concerning claim 6 of this application is made to make a passage condition the above-mentioned detailed information write-in switching means, only when the predetermined additional information which the user specified [the above-mentioned control signal] is detected.

[0013] Moreover, invention concerning claim 7 of this application is a television receiver which receives the television signal by which digital coding was carried out. A digital television signal analysis means to carry out a separation extract and to output the additional information which shows the location on the screen of the image which analyzes the television signal by which digital coding was carried out [above-mentioned], decodes the television signal by which digital coding was carried out [above-mentioned], and is obtained from the above-mentioned television signal, A means to display an icon on the location specified by the additional information

which the above-mentioned digital television signal analysis means on monitor display outputs, a means to choose the above-mentioned icon, and when an icon is chosen The television signal by which digital coding was carried out is decoded, and it has a picture signal output means to output the detailed information transmitted corresponding to the location of this icon as a picture signal.

[0014] Moreover, invention concerning claim 8 of this application is equipped with a detailed information record means to record the above-mentioned detailed information, in the television receiver of the claim 7 above-mentioned publication.

[0015] Moreover, invention concerning claim 9 of this application describes the additional information which should be transmitted to the data area for users of the television signal by which digital coding was carried out [above-mentioned], and it is made to transmit in the additional information transmitting approach of transmitting the television signal which made additional information still more detailed information relevant to it, and carried out multiplex to the television signal by which digital coding was carried out independently with a program or commercials.

[0016] Moreover, invention concerning claim 10 of this application transmits the code which shows the object of information offer as the above-mentioned additional information, and the code of the text which shows the information on the object of this information offer, or image information in the additional information transmitting approach of the claim 9 above-mentioned publication.

[0017] Moreover, invention concerning claim 11 of this application transmits the number of the still picture which displays the code which shows the object of information offer as the above-mentioned additional information, the channel number which has transmitted the detailed information on the object of this information offer, or the detailed information on the object of this information offer in the additional information transmitting approach of the claim 9 above-mentioned publication.

[0018] Moreover, invention concerning claim 12 of this application transmits the number of the code which shows the location on the screen of the image which decodes the television signal concerned by which digital coding was carried out, and is obtained as the above-mentioned additional information, and the still picture which displayed the detailed information corresponding to the channel number or this location which has transmitted the detailed information corresponding to this location in the additional-information transmitting approach of the claim 9 above-mentioned publication.

[0019] Moreover, invention concerning claim 13 of this application is MPEG 2-Video as a television signal by which digital coding was carried out [above-mentioned] in the additional information transmitting approach of the claim 9 above-mentioned publication. A stream is used.

[0020]

[Embodiment of the Invention]

The television receiver in the gestalt 1 of operation of the gestalt 1. invention in this application of operation In the television receiver which receives an NTSC (National Television System Committee) video signal (10) as shown in drawing 1 An additional information decoding means to carry out a separation extract and to output an additional information code from the above-mentioned NTSC video signal (M1), The additional information record means for recording the additional information code which this additional information decoding means outputs (M5), The additional information write-in switching means which embraces a predetermined control signal (M3), and passes / intercepts the additional information code which the above-mentioned additional information decoding means (M1) outputs to the above-mentioned additional information record means (M5) (M4), A conversion means to change into an alphabetic character or an image the additional information code read from the additional information code or the above-mentioned additional information record means (M5) which the above-mentioned additional information decoding means (M1) outputs (M2), It has a signal composition means (M7) to compound the above-mentioned NTSC video signal and the additional information changed into the alphabetic character or the image by the above-mentioned conversion means (M2), and to output as a monitor output signal. The television receiver by the gestalt 1 of this operation by this configuration with the usual program and commercials From the television signal with which multiplex [of the still more detailed information relevant to it] was independently carried out as additional information, required information can be chosen and recorded [collect and] and this additional information collected and recorded can be variously used as a database.

[0021] Here, the record demand signal which requires directly that a user should record additional information from the exterior as a control signal (M3) can be used. Moreover, it is possible to hold the code (keyword) which shows the additional information which desires what a user records, to establish a code comparison means to output the signal which makes a passage condition an additional-information write-in switching means (M4), when the additional-information code which an additional-information decoding means (M1) outputs has this keyword, and to also consider as the configuration using the output of this code comparison means as a control signal (M3). Only the additional information for which it asks after fixed time amount progress can be accumulated in an additional information record means (M5), without requiring directly that a user should record additional information one by one from the exterior, if the keyword is beforehand set up by establishing such a code comparison means.

[0022] The television receiver in the gestalt 2 of operation of the gestalt 2. invention in this application of operation In the television receiver which receives the video signal 20 by which digital coding was carried out as shown in drawing 2 A digital television signal analysis means to carry out the separation extract of this ** rare ***** additional information from the above-mentioned video signal, and to output as an additional information code when the video signal 20 by which digital coding was carried out [above-mentioned] is analyzed and additional information is included in this video signal (M8), The additional information record means for recording the additional information code which the above-mentioned digital television signal analysis means (M8) outputs (M5), The additional information write-in switching means which embraces a predetermined control signal (M3), and passes / intercepts the additional information code which the above-mentioned digital television signal analysis means (M8) outputs to the above-mentioned additional information record means (M5) (M4), A conversion means to change into an alphabetic character etc. the additional information code read from the additional information code or the above-mentioned additional information record means (M5) which the above-mentioned digital television signal analysis means (M8) outputs (M10), A video-signal decoding means to decrypt the video signal by which digital coding was carried out [above-mentioned], and to output a video signal (M9), It has a signal composition means (M7) to compound the video signal outputted from the above-mentioned video-signal decoding means (M9), and the additional information

changed into the alphabetic character etc. by the above-mentioned conversion means (M10), and to output as a monitor output signal. The television receiver by the gestalt 2 of this operation by this configuration with the usual program and commercials From the television signal with which multiplex [of the still more detailed information relevant to it] was independently carried out as additional information, required information can be chosen and recorded [collect and] and this additional information collected and recorded can be variously used as a database.

[0023] Here, as a control signal (M3), the record demand signal which requires directly that a user should record additional information from the exterior can be used like the television receiver in the gestalt 1 of the above-mentioned implementation. Moreover, it is possible to hold the code (keyword) which shows the additional information which desires what a user records, to establish a code comparison means to output the signal which makes a passage condition an additional-information write-in switching means (M4), when the additional-information code which an additional-information decoding means outputs has this keyword, and to also consider as the configuration using the output of this code comparison means as a control signal (M3). Only the additional information for which it asks after fixed time amount progress can be accumulated in an additional information record means (M5), without requiring directly that a user should record additional information one by one from the exterior, if the keyword is beforehand set up by establishing such a code comparison means.

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EXAMPLE

[Example]

The television receiver by the example 1 of the invention in this application based on the gestalt 1 of the above-mentioned implementation is explained about drawing 3 below example 1. In drawing 3, when 11 wants to display additional information, the additional information display demand signal which a user inputs, and 12 are the record demand signals from the user for recording the additional information currently displayed, and this record demand signal 12 is equivalent to the control signal M3 shown in drawing 1. 13 is a playback demand signal from the user for reproducing the recorded additional information. Moreover, 100 is a Rhine 21 analysis means to detect the 21st line, in order to judge [whether above-mentioned NTSC signal 10 is considered as an input, and additional information is transmitted, and]. 101 is an AND circuit which considers as an input the above-mentioned additional information display demand signal 11 and the signal 18 which shows that it is in the condition that additional information is transmitted with the Rhine 21 analysis means 100, and is for turning on/off controlling an additional information decoding means 102 to mention later based on these signals. 102 is a thing equivalent to the additional information decoding means M1 shown in drawing 1. When it will be in an ON state with the control signal 15 which receives the video signal 14 which carried out through [of the above-mentioned analysis means 100], and is outputted from above-mentioned AND circuit 101. An additional information decoding means to carry out a separation extract and to output the additional information included in a video signal 14, and 103 are the things equivalent to the conversion means M2 of drawing 1. The code / alphabetic character, and an image transformation means to change the additional information codes 16a and 16b into an alphabetic character or an image. A frame memory for 104 to accumulate temporarily the additional information changed into the alphabetic character etc. and 105 are signal composition means which compound the NTSC video signal 10 and the additional information signal accumulated in the above-mentioned frame memory 104, and are made into the monitor output signal 17. These frame memories 104 and the signal composition means 105 are equivalent to the signal composition means M7 shown in drawing 1. 108 is record media for recording and accumulating the additional information code which is equivalent to the additional information record means M5 shown in drawing 1, and the additional information decoding means 102 outputted, such as HDD (hard disk driver). Moreover, 106 is equivalent to the additional information write-in switching means M4 which is the switch to permit and shows recording additional information code 16a which the additional information decoding means 102 outputs on HDD108 for record to drawing 1, when the record demand signal 12 is inputted. 107 is a switch for reading, when the additional information recorded on HDD108 for record is inputted into the playback demand signal 13, and outputting to a code / alphabetic character, and the image transformation means 103. [0025] Next, actuation of the television receiver of the above-mentioned example 1 is explained. In order to notify that it is additional information transmission as an NTSC video signal 10 to receive, it is drawing 4 (a). Multiplex is performed using a vertical-retrace-line period (VBI=Vertical Blanking Interval), the wave which tells that a bar code is sent to the 21st line next is established, and a character code (for example, JIS code) is sent in other Rhine, for example, the 22nd line, so that it may be shown (refer to drawing 4 (b)). Since the color subcarrier frequency fsc is 3.58MHz in NTSC system when for example, the above-mentioned pulse width T is made into $T = 1/(4 \times fsc)$ here, pulse width T is set to 70ns. Therefore, although it is 910 dots in one line, when the part already used by the horizontal synchronizing pulse or the color burst is here and this is removed, generally the number of the effective length who can use it for a signal is 768. If the kanji is used, it will be 16 bits (dot) to coding of one character. Since it is the part need, $768 / 16 = 48$ alphabetic transmit can be carried out per line after all.

[0026] In addition, although it is possible to replace with an alphabetic character here and to transmit graphic form information in a bit map, there is a transmission capacity-limitation in NTSC system. For example, the 2048 field is needed, if it is needed $256 \times 256 / 32 = 2048$ (Rhine) and one line is used in the 1 field, in order to be able to send the data of 768 (dot) / $24 = 32$ (dot) part by one line and to transmit the bit map of the size of 256×256 , if 24 bits of image data shall be sent in order of Red/Blue/Green in 8-bit resolution. since it is generally 60 fields / second — transmission of this bit map — $2048 / 60 = \text{---}$ there is a limit in the magnitude of the image data which become this thing for 34 seconds, therefore can be transmitted practical.

[0027] Then, if both signals 18 which show that it is [additional information display demand signal 11 and additional information] under transmission are inputted into AND circuit 101, the additional information decoding means 102 will be in an ON state, as mentioned above, from a video signal, will carry out a separation extract and will output the additional information code of 48 characters per line contained in a video signal 14. When the record demand signal 12 is inputted, while a switch 106 turns on this additional information code 16a and it is recorded on HDD108 for record, it is changed into an alphabetic character by the code / alphabetic character, and the image transformation means 103, and the alphabetic data for one screen etc. is accumulated in a frame memory 104. With the signal composition means 105, the NTSC video signal 10, the alphabetic data for one screen accumulated in the above-mentioned frame memory 104, etc. are compounded, and the monitor output signal 17 is outputted.

[0028] On the other hand, the additional information code accumulated in HDD108 for record by above-mentioned actuation When the playback demand signal 13 from a user is inputted, a switch 107 turns on and data 16b of additional information is read from HDD108 for record. After being changed into text by the code / alphabetic character, and the image transformation means 103 and accumulating the information for one screen by the frame memory 104, it is outputted as a monitor output signal 17 through the signal

composition means 105. When it compounds with the video signal under current reception, and alphabetic data is displayed, when the NTSC video signal 10 is inputted at this time, and the NTSC video signal 10 is not received, only text is displayed on a screen. The approach of, carrying out 2 screen separation of the composite method [alphabetic data / based on the above-mentioned signal composition means 105 / the video signal and alphabetic data] for example, and it displaying is mentioned.

[0029] In addition, the bar code which a user wishes is reserved beforehand, and only when this is in agreement as compared with the bar code transmitted by the 21st line, you may make it record the additional information concerned at HDD108 for record, for example in the case of commercials, although the above explanation explained the case where additional information 16a coded to the timing into which the record demand signal 11 from a user was inputted was recorded. By doing in this way, the database with which the information which a user considers as a request automatically was accumulated comes to be created after fixed time amount.

[0030] Thus, according to this example 1, it sets to the television receiver of NTSC system. The separation extract of the additional information transmitted is carried out using the additional information decoding means 102 with the usual image. Since the additional information by which record was carried out [above-mentioned] was taken out and an indication was given possible with the playback demand signal 13 from a user while recording this on HDD108 for record according to the demand of a user, the additional information displayed on real time is catalogized. By the way, it takes out, and can refer to, and there is effectiveness which is the need always that a deployment of additional information can be aimed at. Moreover, if only the additional information considered as a request is chosen, additional information is moreover catalogized automatically and it sees from a user side by reserving beforehand the class of additional information for which a user wishes, while not knowing after fixed time amount, additional information can be collected, and efficient information gathering is possible.

[0031] The television receiver by the example 2 of the invention in this application based on the gestalt 2 of example 2., next the above-mentioned implementation is explained about drawing 5 . For this example 2, the television signal by which digital coding was carried out is MPEG 2-Video. It is the television receiver which is a stream. It is equivalent to the digital television signal analysis means M8 which shows 200 in drawing 2 in drawing 5 , and is MPEG 2-Video. It is a stream analysis means to consider a stream 20 as an input, to carry out the separation extract of the additional information codes, such as an alphabetic character, from this stream 20, and to output. When this stream analysis means 200 receives the additional information display demand signal 11 from a user, ON / off actuation is controlled. 201 is equivalent to the video-signal decoding means M9 shown in drawing 2 , and is the above-mentioned MPEG 2-Video. MPEG 2-Video which considers a stream 20 as an input and changes the this encoded image information into the usual video signal 14 It is a decoder. Other parts are the same as the part which attached the same sign in the example 1 shown in drawing 3 .

[0032] Hereafter, actuation of the television receiver of the above-mentioned example 2 is explained. MPEG 2-Video which receives When image information, text, etc. are stored in the stream 20 in the predetermined format and the display demand signal 11 from a user is inputted, the stream analysis means 200 will be in an ON state, and it is the above-mentioned MPEG 2-Video. Additional information, such as an alphabetic character contained in a stream 20, is taken out, and this is outputted as signal 16a. The above-mentioned additional information is within MPEG specification. How to use a User Data (data for users) field (8 bits), defining it uniquely can be considered. That is, it is the identifier of being additional information '0000 0100' It carries out and is a certain bar code '0110 0110 1111 1111 0000 0000' If it carries out, a definition will be given as follows.

0000 0000 0000 0000 0000 0000 1011 0010 — User Data Start Code (0xB2) 0000 0100 — that it is additional information shown identifier 0110 0110 — 8 bits of the beginning of the 24 bits of the bar codes 1111 1111 The following 8 bits of 24 bits of — bar codes 0000 0000 8 bits of the last of the 24 bits of the — bar codes 0011 1011 — one kanji 8 bits of high orders of the shown 16 bits 1100 1101 — 8 bits of low order of the 16 bits which shows one kanji — — — 0000 0000 0000 0000 0000 0001 — the user end of data A stream current by receiving the stream of the above formats with the code, therefore the above-mentioned stream analysis means 200 which are shown is additional information ('0000 0100'). It is discriminable that it is a thing about a bar code ('0100 0110 1111 1111 0000 0000'). In addition, sending it can be continued without limit until alphabetic data sends the code which shows the user end of data.

[0033] On the other hand, it is MPEG 2-Video. MPEG 2-Video inputted in the decoder 201 The image information included in a stream 20 is changed into a video signal 14, and it outputs to the signal composition means 105. Conversion to an alphabetic character from a code is performed by a code / transliteration means 103, and additional information code 16a outputted from the above-mentioned stream analysis means 200 is accumulated in a frame memory as data for one screen. If the record demand signal 12 from a user is inputted at this time, a switch 106 will turn on and additional information code 16a outputted from the stream analysis means 200 will be written in HDD108 for record. The additional information accumulated in the above-mentioned frame memory 104 is MPEG 2-Video by the signal composition means 105. It is compounded with the video signal 104 outputted from the decoder 201, and becomes the monitor output signal 17.

[0034] Moreover, if the playback demand signal 13 from a user is inputted, a switch 107 will turn on and it will be read from HDD108 for record, and it becomes the monitor output signal 17 through a code / transliteration means 103, a frame memory 104, and the signal composition means 105 like the case of the above-mentioned example 1, for example, 2 screen separation etc. is carried out, and the additional information accumulated in above-mentioned HDD108 for record is displayed on a monitor.

[0035] In addition, MPEG 2-Video which reserved beforehand the bar code which a user wishes like the above-mentioned example 1 also in this example in the case of commercials, and has been transmitted with the stream analysis means 200 Only when this is in agreement as compared with the bar code contained in a stream, you may make it record the additional information concerned on HDD108 for record. By doing in this way, the database with which the information which a user considers as a request automatically was accumulated comes to be created after fixed time amount.

[0036] Thus, according to this operation 2, it is MPEG 2-Video. In the digital-type television receiver using a method With the usual image, analyze the additional information transmitted with the stream analysis means 200, and only additional information code 16a is taken out. Since the additional information by which record was carried out [above-mentioned] was taken out and an indication was given possible with the playback demand signal 13 from a user while recording this on HDD108 for record according to the demand of a

user, the additional information displayed on real time is catalogized. By the way, it takes out, and can refer to, and there is effectiveness which is the need always that a deployment of additional information can be aimed at. Moreover, if only the additional information considered as a request is chosen, additional information is moreover catalogized automatically and it sees from a user side by reserving beforehand the class of additional information for which a user wishes, while not knowing after fixed time amount, additional information can be collected, and efficient information gathering is possible.

[0037] The television receiver by the example 3 of the invention in this application based on the gestalt 2 of example 3., next the above-mentioned implementation is explained about drawing 6. Setting to drawing 6, 109 is MPEG 2-Video by the stream analysis means 200. The code / an image-transformation means of changing into the usual picture signal the additional information (image data displayed in bit map code) by which the separation extract was carried out from a stream 20, and 300 are removable record media, such as a floppy disk which can exchange data between HDD108 for storage, and other parts are the same as the part which attached the same sign in the example 2 shown in drawing 5.

[0038] Hereafter, actuation of the television receiver of the above-mentioned example 3 is explained. Although record of an additional information code and fundamental actuation of read-out are the same as that of the television receiver of the above-mentioned example 2, in order to treat not an alphabetic character but image data as additional information here, additional information serves as a bit map format, and in order to compound with a video signal 14 with the signal composition means 105, the points constituted so that data may be changed into an image from a code with a code / image transformation means 109 differ. Thus, MPEG 2-Video As additional information, besides text, what has comparatively large amount of information, such as graphic form information, can be dealt with as additional information, and can extend the range of multiplexing of broadcast by using a format.

[0039] Moreover, although a user can use the additional information accumulated in HDD108 for record by reading this and usually displaying on a monitor, the removable record medium 300 for example, in exchanging the 3rd person and required information Choose what is considered as a request among the additional information accumulated in this HDD for record, and it takes out outside. When it writes out to the removable record medium 300 and the partner who received this writes the additional information recorded on this record medium 300 in his HDD108 for record The additional information which the third person created can be incorporated in its own database, and it is effective in being useful to information interchange etc. In addition, such a removable record medium 300 can apply this also to the above-mentioned example 1 and an example 2, and does the same effectiveness so.

[0040] Example 4., next the television receiver by the example 4 of the invention in this application are explained about drawing 7. MPEG 2-Video which transmits in the above-mentioned example 2 and the example 3 Inside of MPEG specification of a stream 20 Although the additional information itself was described to the User Data field, the points he is trying to describe only the channel number or still picture number from which detailed information appears in the User Data field in this example 4 as additional information differ greatly compared with the above-mentioned example 2 and an example 3. That is, it is MPEG 2-Video which considered as the input the additional information (channel number or still picture number) signal 19 from which 400 was taken out with the stream analysis means 200 in drawing 7, and was specified by additional information. MPEG 2-Video which decodes the still picture specified by the channel of a stream 20, or additional information It is a still picture decoder. In this example 4, it is based on additional information, and is MPEG 2-Video. It is MPEG 2-Video at the still picture decoder 400. A stream 20 is decoded, and it outputs as a picture signal, and is considering as the configuration which records this picture signal on HDD108 for record.

[0041] Hereafter, actuation of the television receiver of the above-mentioned example 4 is explained. With the stream analysis means 200, it is MPEG 2-Video. The channel number (or number of a still picture) in which the code which identifies that it is the additional information included in a stream 20, a bar code, and detailed information appear is detected, and it is latter MPEG 2-Video. In a still picture decoder, the channel (image) concerned is decoded according to the channel number (still picture number) following the channel by which detection was carried out [above-mentioned]. The above-mentioned additional information is within MPEG specification. How to use a User Data (data for users) field (8 bits), defining it uniquely can be considered. That is, it is the identifier of being additional information '0000 0100' It carries out and is a certain bar code '0110 0110 1111 1111 0000 0000' If it carries out, a definition will be given as follows.

0000 0000 0000 0000 0000 0000 1011 0010 1111 1111 [0011 1011 — Channel Number in which Detailed Information Appears (or Still Picture Number)] — User Data Start Code (0XB2) 0000 0100 — Identifier Which Shows that it is Additional Information 0110 0110 — 8 Bits of Beginning of the 24 Bits of the Bar Codes — The Following 8 Bits of 24 Bits of Bar Codes 0000 0000 — 8 Bits of the Last of the 24 Bits of the Bar Codes

1100 1101 — Channel Number in which Detailed Information Appears (or Still Picture Number)

— — — — 0000 0000 0000 0000 0000 0001 — A stream current by receiving the stream of the above formats with the code, therefore the above-mentioned stream analysis means 200 which show the user end of data is additional information ('0000 0100'). It is discriminable that it is a thing about a bar code ('0100 0110 1111 1111 0000 0000'). It is based on the information on the continuing channel number or a still picture number, and is MPEG 2-Video at the MPEG 2-Video still picture decoder 400. The picture signal which is detailed information is acquired by decoding a stream. The acquired picture signal is memorized by the frame memory 104. At this time, if the record demand signal 12 from a user is inputted, a switch 106 will turn on and the picture signal which is the detailed information concerned will be recorded on HDD108 for record. On the other hand, it is MPEG 2-Video. A decoder 201 is inputted MPEG 2-Video. The animation of a channel including the above-mentioned additional information of a stream 20 is changed into a video signal 14 by the usual decoding actuation, and it outputs to the signal composition means 105. And a video signal 14 is MPEG 2-Video memorized by the frame memory 104. It is compounded with the picture signal decoded by the still picture decoder 400, and is outputted as a monitor signal 17. 2 screen separation and an overlap format as well as [as a synthetic approach] each above-mentioned example can be considered. Moreover, if a switch 107 turns on, it is called to a frame memory 104, it becomes data for one screen here and there is a video signal under current reception when the playback demand signal 13 from a user is inputted, the picture signal accumulated in HDD108 for record as mentioned above will be compounded with it with the signal composition means 105, and will be outputted as a monitor signal 17.

[0042] Thus, according to this example 4, it is MPEG 2-Video. Inside of MPEG specification of a stream 20 The channel number with

which detailed information appears in the User Data field, or the number of a still picture should be described as additional information. It is based on this additional information and is MPEG 2-Video. It is MPEG 2-Video at the still picture decoder 400. A stream 20 is decoded. The picture signal and MPEG 2-Video which were obtained It is MPEG 2-Video at a decoder 201. Since the video signal 14 which decoded the stream 20 and was acquired was compounded with the signal composition means 105, additional information data are manageable in package.

[0043] In addition, it is MPEG 2-Video about additional information. Instead of a layer describing, it is MPEG 2-Systems. The description which can be set may be defined similarly separately and the same effectiveness is completely acquired. Hereafter, this is explained using drawing 8. The stream analysis means 200 is MPEG 2-Systems in which video, an audio, and data were intermingled in drawing 8. The stream of the video to which the user is viewing and listening now is supplied to the decoder 203 of Maine in response to a bit stream 20 (system stream). Moreover, this MPEG 2-Systems Addition image data incidental to the bit stream are supplied to the decoder 202 for additional information (however, only when this exists).

[0044] Each decoder 201,202 decodes each inputted stream, and changes it into a video signal. It is uniquely defined by the custom field in conformity with the functor specified by MPEG 2-System which stream is the additional information of the video stream to which the viewer is viewing and listening now. Here, additional information does not need to be a still picture. In digital transmission, transmission of an animation is also especially easy.

[0045] If there is record demand 12 from a user, it will record on HDD108 for record with a stream. Since it becomes possible to record for information [being compressed] at this time, the capacity of a record medium can be used effectively.

[0046] And if the playback demand signal 13 from a user is inputted, only the additional information stream read from HDD108 for record is supplied to the decoder 202 for additional information, and the additional information decoded and this decoded by this decoder 202 by 202 will be compounded by the selector 204 with the decoding result (output of the decoder 203 for the Maine images) and the signal composition means 105 of the Maine image, and will be outputted as a monitor output signal 17. As [both] an output form on this monitor, a right-and-left 2 screen-separation format, a picture Inn picture format, etc. which are an animation can be considered. In addition, MPEG 2-System and MPEG 2-Video which have been used in the above example It is the specification specified as an international standard.

[0047] Moreover, you may make it it not only to display the data stored in each above-mentioned example on the Braun tube, but output them to airline printers, such as a printer.

[0048] Furthermore, each above-mentioned example is made into a two-way communication format, and you may make it make it correspond to home shopping (for example, MTS:Mutual Text System) based on the stored data.

[0049] Moreover, although only additional information was recorded on HDD108 for record, you may make it record a video signal with additional information in each above-mentioned example. In this case, since timing superimposed on additional information is performed later than that video signal, in order to record a video signal based on additional information, it is necessary to form the image memory which has the capacity which can accumulate the video signal for about 15 seconds.

[0050] Furthermore, although the channel number or still picture number of the contents of additional information or additional information was recorded in the above-mentioned example 2 thru/or the example 4, it is good by displaying an icon on a screen and choosing the icon also as a configuration which acquires detailed information.

[0051] By namely, the thing which it is related at the time of transmission and done at it for the definition of the location and detailed information on the object which has detailed information, for example, the screen where goods are displayed In a receiving side, an icon is displayed on the location on the screen where the goods which have the above-mentioned detailed information are displayed according to assignment of a user. According to the icon selection by the user, the detailed information corresponding to the location of the selected icon can be acquired by decoding another channel or a still picture, this can be displayed on a screen, and it can record if needed.

[0052] How to use the data area for users within MPEG specification as an example of description of additional information, defining it uniquely can be considered. That is, it is the identifier of being additional information '0000 0100' It carries out and is a certain bar code '0110 0110 1111 1111 0000 0000' If it carries out, a definition will be given as follows.

0000 0000 0000 0000 0000 0000 1011 0010 — User Data Start Code (0XB2) 0000 0100 — Identifier Which Shows that it is Additional Information 0000 0000 — X Coordinate 8 bits of high orders of the 16 bits to express 1000 0000 — 8 bits of low order of the 16 bits expressing X coordinate 0000 0001 — 8 bits of high orders of the 16 bits expressing Y coordinate 0000 0000 — Y coordinate 8 bits of low order of the 16 bits to express 0110 0110 — 8 bits of the beginning of the 24 bits of the bar codes 1111 1111 The following 8 bits of 24 bits of — bar codes 0000 0000 8 bits of the last of the 24 bits of the — bar codes 0011 1011 — Channel number in which detailed information appears (or still picture number)

1100 1101 — Channel Number in which Detailed Information Appears (or Still Picture Number)

— — — — 0000 0000 0000 0000 0000 0001 It is based on such additional information. the code which shows — user end of data — When the decoder of a receiving side displays an icon on for example, (128,256) the coordinate location on the described screen, and a coordinate location according to a demand of a user and a user chooses this icon with remote control etc. The channel in which detailed information appears, or a still picture can be decoded, and detailed information, such as goods currently displayed on the coordinate location, can be displayed on a screen. And it is also possible to accept the need as well as each above-mentioned example, and to record and print. Moreover, also in this example, in description of additional information, even if it uses the custom field of MPEG 2-System, the completely same effectiveness is acquired.

[Translation done.]

JAPANESE

[JP,09-214904,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART TECHNICAL PROBLEM MEANS EXAMPLE DESCRIPTION OF
DRAWINGS DRAWINGS CORRECTION OR AMENDMENT

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing the configuration of the additional information incorporation circuit of the television receiver concerning the gestalt 1 of operation of this invention.

[Drawing 2] It is the block diagram showing the configuration of the additional information incorporation circuit of the television receiver concerning the gestalt 2 of operation of this invention.

[Drawing 3] It is the block diagram showing the configuration of the additional information incorporation circuit of the television receiver concerning the example 1 of this invention.

[Drawing 4] They are drawing (drawing 4 (a)) showing the wave of Rhine which shows the beginning of the additional information of the NTSC signal inputted into the television receiver of the above-mentioned example 1, and drawing (drawing 4 (b)) showing the wave of Rhine which shows the data of the additional information of an NTSC signal.

[Drawing 5] It is the block diagram showing the configuration of the additional information incorporation circuit of the television receiver concerning the example 2 of this invention.

[Drawing 6] It is the block diagram showing the configuration of the additional information incorporation circuit of the television receiver concerning the example 3 of this invention.

[Drawing 7] It is the block diagram showing the configuration of the additional information incorporation circuit of the television receiver concerning the example 4 of this invention.

[Drawing 8] It sets to the television receiver concerning the example 4 of this invention, and is MPEG 2-systems. It is the block diagram showing the configuration of the additional information incorporation circuit at the time of using specification.

[Description of Notations]

C1, C2 — An additional information incorporation circuit, M1 — Additional information decoding means, M2 — A conversion means, M3 — A control signal, M4 — An additional information write-in switching means, M5 — An additional information record means, M6 — An additional information read-out means, M7 — Signal composition means, M8 — A digital television signal analysis means, M9 — Video-signal decoding means, M10 — A conversion means, 10 — An NTSC signal, 11 — Additional information display demand signal, 12 — An additional information write request signal, 13 — An additional information playback demand signal, 14 — Video signal, 15 — A control signal, 16a, 16b — The addition analysis means, 17 which were coded — Monitor output signal, 18 — The signal, 19 which show that additional information is transmitted — Additional information, 20 — MPEG 2-Video A stream, 100 — Rhine 21 analysis means, 101 — An AND circuit, 102 — An additional information decoding means, 103 — A code / alphabetic character, and an image transformation means, 104 — A frame memory, 105 — A signal composition means, 106,107 — Switch, 108 — HDD for record, 109 — A code / transliteration means, 110 — A code / image transformation means, 200 — A stream analysis means, 201 — MPEG 2-Video Decoder, 202 [— Removable storage means, such as a floppy disk, 400 / — MPEG 2-Video / Still picture decoder.] — The decoder for additional information, 203 — The decoder for the Maine images, 204 — A selector, 300

[Translation done.]

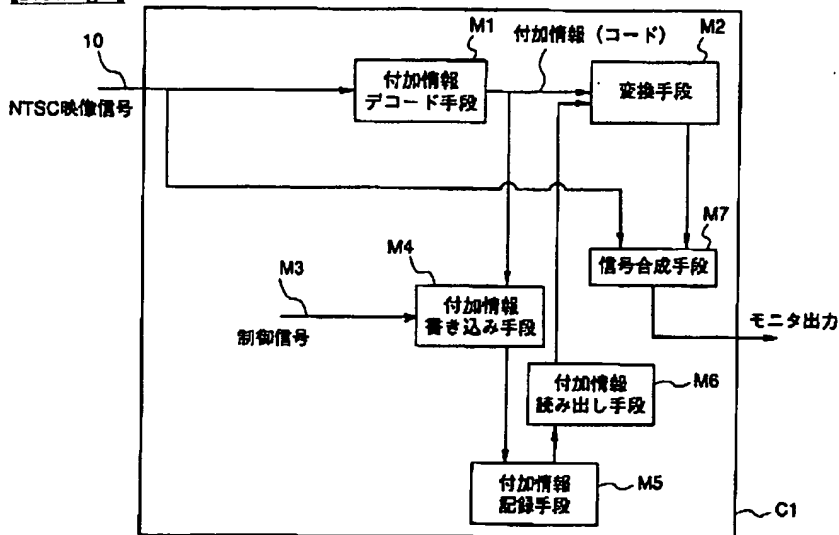
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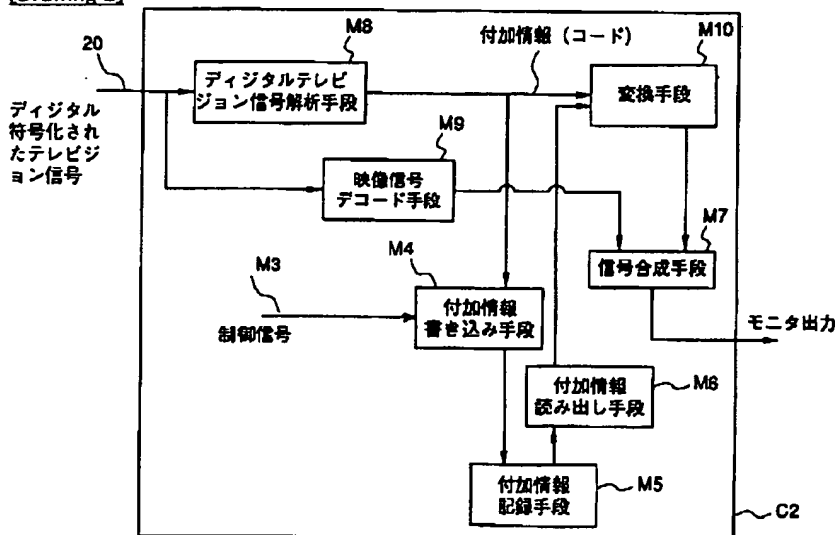
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DRAWINGS

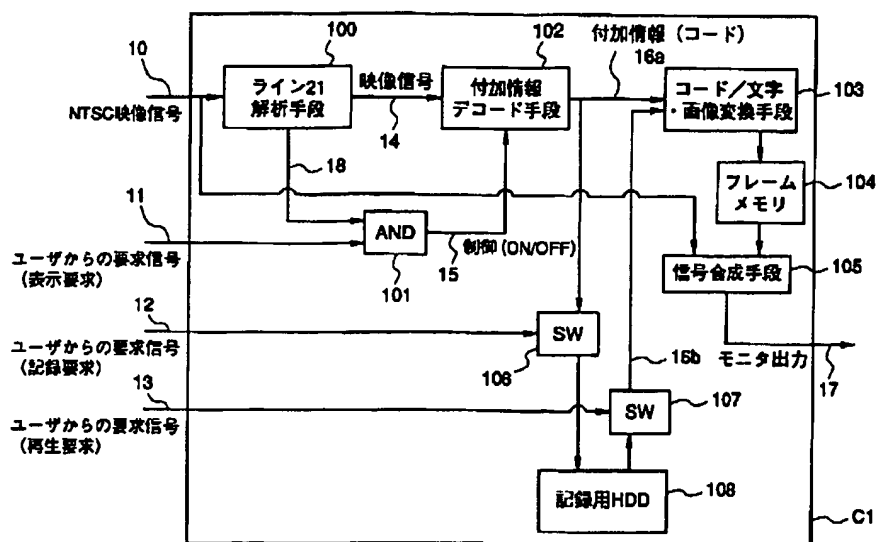
[Drawing 1]



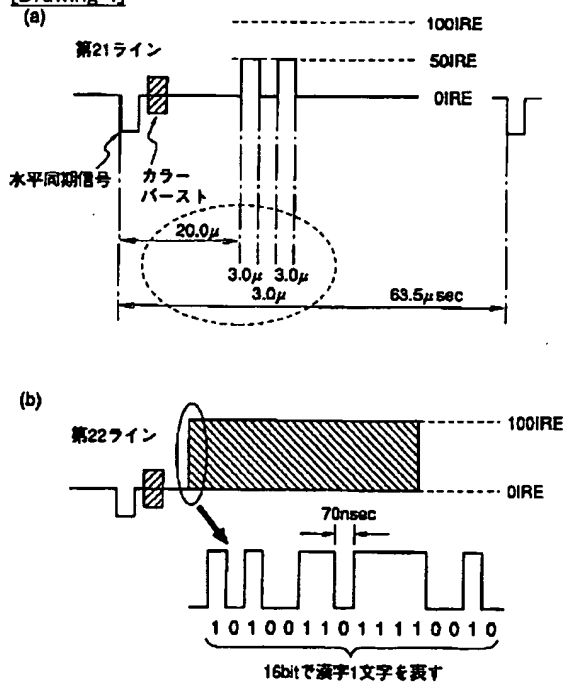
[Drawing 2]



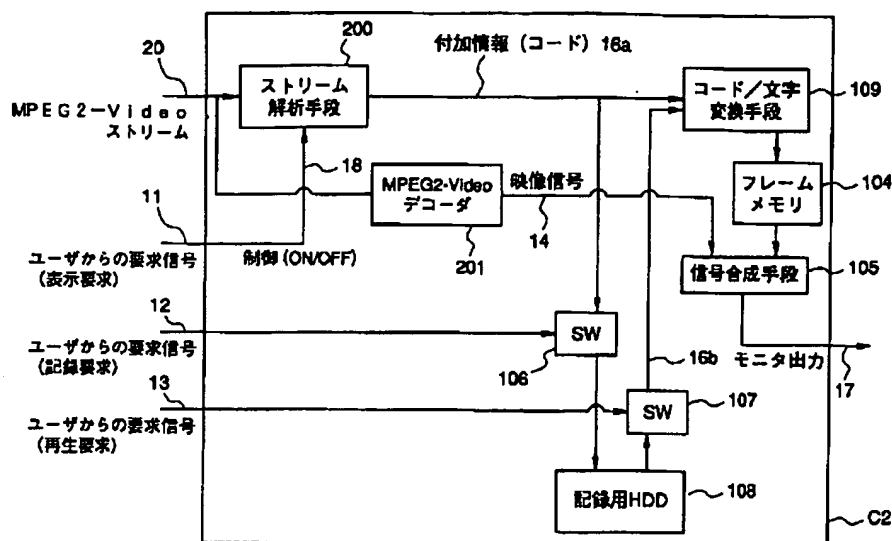
[Drawing 3]



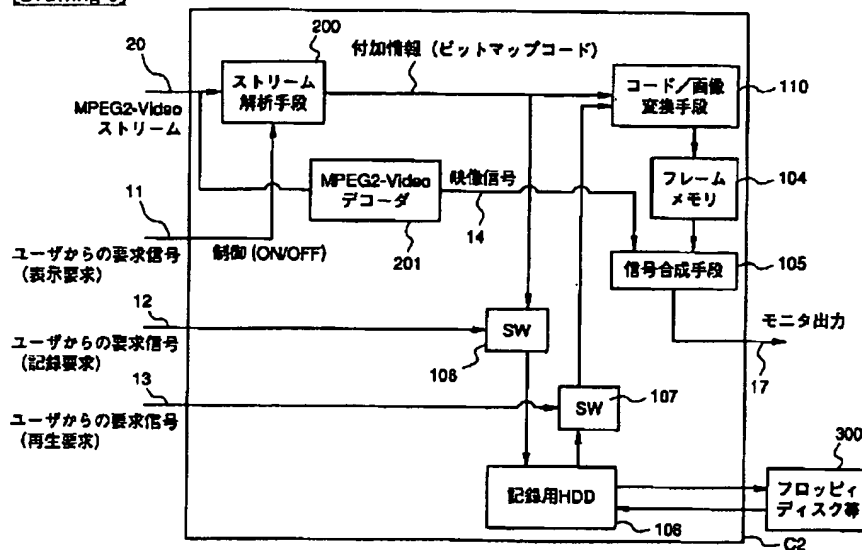
[Drawing 4]



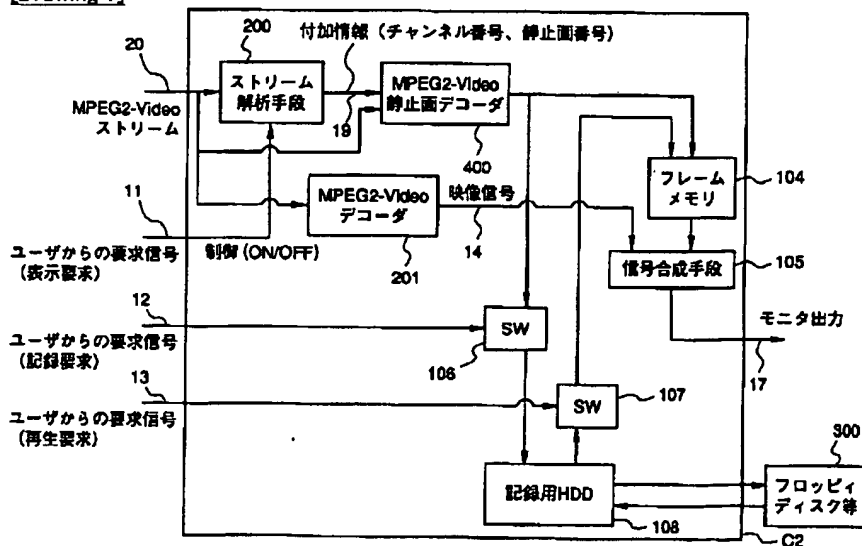
[Drawing 5]



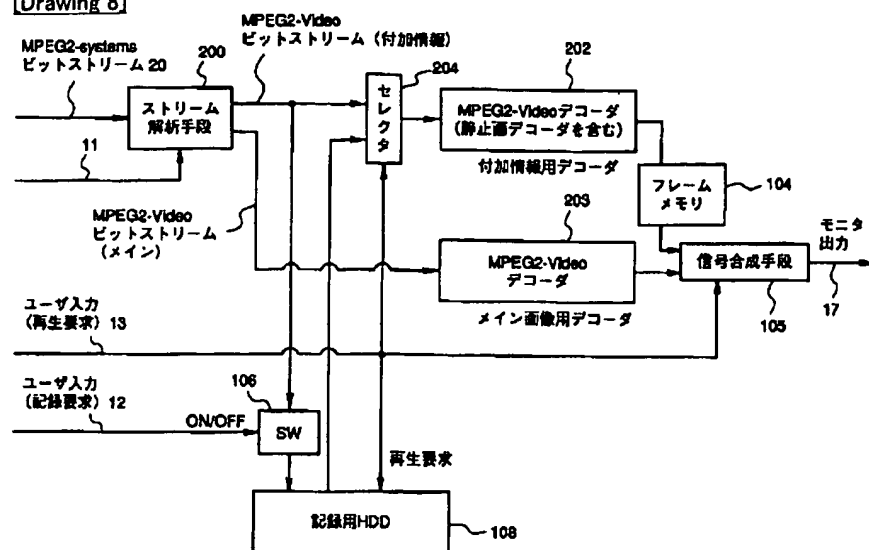
[Drawing 6]



[Drawing 7]



[Drawing 8]



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CORRECTION OR AMENDMENT

[Kind of official gazette] Printing of amendment by the convention of 2 of Article 17 of Patent Law
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 [Publication date] July 6, Heisei 13 (2001. 7.6)

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H04N 7/08 A
 5/91 E

[Procedure revision]
 [Filing Date] June 22, Heisei 12 (2000. 6.22)
 [Procedure amendment 1]
 [Document to be Amended] Specification
 [Item(s) to be Amended] Claim 1
 [Method of Amendment] Modification
 [Proposed Amendment]
 [Claim 1] It is the television receiver which receives an analog video signal,
 An additional information detection means to carry out a separation extract and to output an additional information code from the above-mentioned analog video signal,
 The additional information record means for recording the additional information code which this additional information detection means outputs,
 The additional information write-in switching means which embraces a predetermined control signal, and passes / intercepts the additional information code which the above-mentioned additional information detection means outputs to the above-mentioned additional information record means,
 A conversion means to change into an alphabetic character or an image the additional information code read from the additional information code or the above-mentioned additional information record means which the above-mentioned additional information detection means outputs,
 The television receiver characterized by having a signal composition means to compound the above-mentioned analog video signal and the additional information changed into the alphabetic character etc. by the above-mentioned conversion means, and to output as a monitor output signal.
 [Procedure amendment 2]
 [Document to be Amended] Specification
 [Item(s) to be Amended] Claim 9
 [Method of Amendment] Modification
 [Proposed Amendment]
 [Claim 9] In the additional information transmitting approach of transmitting the television signal which made additional information still more detailed information relevant to it, and carried out multiplex independently with a program or commercials and by which digital coding was carried out,
 The additional information transmitting approach which describes the additional information which should be transmitted to the data area for users of the television signal by which digital coding was carried out [above-mentioned], and is characterized by transmitting.
 [Procedure amendment 3]

[Document to be Amended] Specification

[Item(s) to be Amended] 0007

[Method of Amendment] Modification

[Proposed Amendment]

[0007]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, invention concerning claim 1 of this application An additional information detection means is a television receiver, and carries out a separation extract and output an additional information code from the above-mentioned analog video signal to receive an analog video signal, The additional information record means for recording the additional information code which this additional information detection means outputs, The additional information write-in switching means which embraces a predetermined control signal, and passes / intercepts the additional information code which the above-mentioned additional information detection means outputs to the above-mentioned additional information record means, A conversion means to change into an alphabetic character or an image the additional information code read from the additional information code or the above-mentioned additional information record means which the above-mentioned additional information detection means outputs, It has a signal composition means to compound the above-mentioned analog video signal and the additional information changed into the alphabetic character or the image by the above-mentioned conversion means, and to output as a monitor output signal.

[Procedure amendment 4]

[Document to be Amended] Specification

[Item(s) to be Amended] 0015

[Method of Amendment] Modification

[Proposed Amendment]

[0015] Moreover, invention concerning claim 9 of this application describes the additional information which should be transmitted to the data area for users of the television signal by which digital coding was carried out [above-mentioned], and it is made to transmit in the additional information transmitting approach of transmitting the television signal which made additional information still more detailed information relevant to it, and carried out multiplex independently with a program or commercials and by which digital coding was carried out.

[Procedure amendment 5]

[Document to be Amended] Specification

[Item(s) to be Amended] 0020

[Method of Amendment] Modification

[Proposed Amendment]

[0020]

[Embodiment of the Invention] The gestalt 1 of operation

The television receiver in the gestalt 1 of operation of the invention in this application In the television receiver which receives an NTSC (National Television System Committee) video signal (10) as shown in drawing 1 An additional information detection means to carry out a separation extract and to output an additional information code from the above-mentioned NTSC video signal (M1), The additional information record means for recording the additional information code which this additional information detection means outputs (M5), The additional information write-in switching means which embraces a predetermined control signal (M3), and passes / intercepts the additional information code which the above-mentioned additional information detection means (M1) outputs to the above-mentioned additional information record means (M5) (M4), A conversion means to change into an alphabetic character or an image the additional information code read from the additional information code or the above-mentioned additional information record means (M5) which the above-mentioned additional information detection means (M1) outputs (M2), It has a signal composition means (M7) to compound the above-mentioned NTSC video signal and the additional information changed into the alphabetic character or the image by the above-mentioned conversion means (M2), and to output as a monitor output signal. The television receiver by the gestalt 1 of this operation by this configuration with the usual program and commercials From the television signal with which multiplex [of the still more detailed information relevant to it] was independently carried out as additional information, required information can be chosen and recorded [collect and] and this additional information collected and recorded can be variously used as a database.

[Procedure amendment 6]

[Document to be Amended] Specification

[Item(s) to be Amended] 0021

[Method of Amendment] Modification

[Proposed Amendment]

[0021] Here, the record demand signal which requires directly that a user should record additional information from the exterior as a control signal (M3) can be used. Moreover, it is possible to hold the code (keyword) which shows the additional information which desires what a user records, to establish a code comparison means to output the signal which makes a passage condition an additional-information write-in switching means (M4), when the additional-information code which an additional-information detection means (M1) outputs has this keyword, and to also consider as the configuration using the output of this code comparison means as a control signal (M3). Only the additional information for which it asks after fixed time amount progress can be accumulated in an additional information record means (M5), without requiring directly that a user should record additional information one by one from the exterior, if the keyword is beforehand set up by establishing such a code comparison means.

[Procedure amendment 7]

[Document to be Amended] Specification

[Item(s) to be Amended] 0023

[Method of Amendment] Modification

[Proposed Amendment]

[0023] Here, as a control signal (M3), the record demand signal which requires directly that a user should record additional information from the exterior can be used like the television receiver in the gestalt 1 of the above-mentioned implementation. Moreover, it is possible to hold the code (keyword) which shows the additional information which desires what a user records, to establish a code comparison means to output the signal which makes a passage condition an additional-information write-in switching means (M4), when the additional-information code which an additional-information detection means outputs has this keyword, and to also consider as the configuration using the output of this code comparison means as a control signal (M3). Only the additional information for which it asks after fixed time amount progress can be accumulated in an additional information record means (M5), without requiring directly that a user should record additional information one by one from the exterior, if the keyword is beforehand set up by establishing such a code comparison means.

[Procedure amendment 8]

[Document to be Amended] Specification

[Item(s) to be Amended] 0024

[Method of Amendment] Modification

[Proposed Amendment]

[0024]

[Example] Example 1

Hereafter, the television receiver by the example 1 of the invention in this application based on the gestalt 1 of the above-mentioned implementation is explained about drawing 3. In drawing 3, when 11 wants to display additional information, the additional information display demand signal which a user inputs, and 12 are the record demand signals from the user for recording the additional information currently displayed, and this record demand signal 12 is equivalent to the control signal M3 shown in drawing 1. 13 is a playback demand signal from the user for reproducing the recorded additional information. Moreover, 100 is a Rhine 21 analysis means to detect the 21st line, in order to judge [whether above-mentioned NTSC signal 10 is considered as an input, and additional information is transmitted, and]. 101 is an AND circuit which considers as an input the above-mentioned additional information display demand signal 11 and the signal 18 which shows that it is in the condition that additional information is transmitted with the Rhine 21 analysis means 100, and is for turning on/off controlling an additional information detection means 102 to mention later based on these signals. 102 is by the control signal 15 which is equivalent to the additional information detection means M1 shown in drawing 1, receives the video signal 14 which carried out through [of the above-mentioned analysis means 100], and is outputted from above-mentioned AND circuit 101. When it will be in an ON state, an additional information detection means to carry out a separation extract and to output the additional information included in a video signal 14, and 103 are the things equivalent to the conversion means M2 of drawing 1. The code / alphabetic character, and an image transformation means to change the additional information codes 16a and 16b into an alphabetic character or an image, A frame memory for 104 to accumulate temporarily the additional information changed into the alphabetic character etc. and 105 are signal composition means which compound the NTSC video signal 10 and the additional information signal accumulated in the above-mentioned frame memory 104, and are made into the monitor output signal 17. These frame memories 104 and the signal composition means 105 are equivalent to the signal composition means M7 shown in drawing 1. 108 is record media for recording and accumulating the additional information code which is equivalent to the additional information record means M5 shown in drawing 1, and the additional information detection means 102 outputted, such as HDD (hard disk driver). Moreover, 106 is equivalent to the additional information write-in switching means M4 which is the switch to permit and shows recording additional information code 16a which the additional information detection means 102 outputs on HDD108 for record to drawing 1, when the record demand signal 12 is inputted. 107 is a switch for reading, when the additional information recorded on HDD108 for record is inputted into the playback demand signal 13, and outputting to a code / alphabetic character, and the image transformation means 103.

[Procedure amendment 9]

[Document to be Amended] Specification

[Item(s) to be Amended] 0027

[Method of Amendment] Modification

[Proposed Amendment]

[0027] Then, if both signals 18 which show that it is [additional information display demand signal 11 and additional information] under transmission are inputted into AND circuit 101, the additional information detection means 102 will be in an ON state, as mentioned above, from a video signal, will carry out a separation extract and will output the additional information code of 48 characters per line contained in a video signal 14. When the record demand signal 12 is inputted, while a switch 106 turns on this additional information code 16a and it is recorded on HDD108 for record, it is changed into an alphabetic character by the code / alphabetic character, and the image transformation means 103, and the alphabetic data for one screen etc. is accumulated in a frame memory 104. With the signal composition means 105, the NTSC video signal 10, the alphabetic data for one screen accumulated in the above-mentioned frame memory 104, etc. are compounded, and the monitor output signal 17 is outputted.

[Procedure amendment 10]

[Document to be Amended] Specification

[Item(s) to be Amended] 0030

[Method of Amendment] Modification

[Proposed Amendment]

[0030] Thus, according to this example 1, it sets to the television receiver of NTSC system, and is the usual image. Since the additional information by which record was carried out [above-mentioned] with the playback demand signal 13 from a user was taken out and it carried out that a display is possible while carrying out the separation extract of the additional information transmitted using the additional-information detection means 102 and recording this to HDD108 for record according to the demand of a user, the additional information displayed on real time catalogizes, by the way, it takes out, it can refer to, and the effectiveness are the need always and that a deployment of additional information can aim at is. Moreover, if only the additional information considered as a request is chosen, additional information is moreover catalogized automatically and it sees from a user side by reserving beforehand the class of additional

information for which a user wishes, while not knowing after fixed time amount, additional information can be collected, and efficient information gathering is possible.

[Procedure amendment 11]

[Document to be Amended] Specification

[Item(s) to be Amended] 0033

[Method of Amendment] Modification

[Proposed Amendment]

[0033] On the other hand, it is MPEG 2-Video. MPEG 2-Video inputted in the decoder 201. The image information included in a stream 20 is changed into a video signal 14, and it outputs to the signal composition means 105. Conversion to an alphabetic character from a code is performed by a code / transliteration means 109, and additional information code 16a outputted from the above-mentioned stream analysis means 200 is accumulated in a frame memory as data for one screen. If the record demand signal 12 from a user is inputted at this time, a switch 106 will turn on and additional information code 16a outputted from the stream analysis means 200 will be written in HDD108 for record. The additional information accumulated in the above-mentioned frame memory 104 is MPEG 2-Video by the signal composition means 105. It is compounded with the video signal 14 outputted from the decoder 201, and becomes the monitor output signal 17.

[Procedure amendment 12]

[Document to be Amended] Specification

[Item(s) to be Amended] 0034

[Method of Amendment] Modification

[Proposed Amendment]

[0034] Moreover, if the playback demand signal 13 from a user is inputted, a switch 107 will turn on and it will be read from HDD108 for record, and it becomes the monitor output signal 17 through a code / transliteration means 103, a frame memory 109, and the signal composition means 105 like the case of the above-mentioned example 1, for example, 2 screen separation etc. is carried out, and the additional information accumulated in above-mentioned HDD108 for record is displayed on a monitor.

[Procedure amendment 13]

[Document to be Amended] Specification

[Item(s) to be Amended] 0037

[Method of Amendment] Modification

[Proposed Amendment]

[0037] Example 3

Next, the television receiver by the example 3 of the invention in this application based on the gestalt 2 of the above-mentioned implementation is explained about drawing 6. Setting to drawing 6, 110 is MPEG 2-Video by the stream analysis means 200. The code / an image-transformation means of changing into the usual picture signal the additional information (image data displayed in bit map code) by which the separation extract was carried out from a stream 20, and 300 are removable record media, such as a floppy disk which can exchange data between HDD108 for storage, and other parts are the same as the part which attached the same sign in the example 2 shown in drawing 5.

[Procedure amendment 14]

[Document to be Amended] Specification

[Item(s) to be Amended] 0038

[Method of Amendment] Modification

[Proposed Amendment]

[0038] Hereafter, actuation of the television receiver of the above-mentioned example 3 is explained. Although record of an additional information code and fundamental actuation of read-out are the same as that of the television receiver of the above-mentioned example 2, in order to treat not an alphabetic character but image data as additional information here, additional information serves as a bit map format, and in order to compound with a video signal 14 with the signal composition means 105, the points constituted so that data may be changed into an image from a code with a code / image transformation means 110 differ. Thus, MPEG 2-Video As additional information, besides text, what has comparatively large amount of information, such as graphic form information, can be dealt with as additional information, and can extend the range of multiplexing of broadcast by using a format.

[Procedure amendment 15]

[Document to be Amended] Specification

[Item(s) to be Amended] 0048

[Method of Amendment] Modification

[Proposed Amendment]

[0048] Furthermore, each above-mentioned example is made into a two-way communication format, and you may make it make it correspond to home shopping based on the stored data. In addition, about a two-way communication format, there is a thing of common knowledge as shown in JP,7-123375,A, for example.

[Procedure amendment 16]

[Document to be Amended] Specification

[Item(s) to be Amended] Explanation of a sign

[Method of Amendment] Modification

[Proposed Amendment]

[Description of Notations]

C1, C2 — An additional information incorporation circuit, M1 — An additional information detection means, M2 — Conversion means, M3 — A control signal, M4 — An additional information write-in switching means, M5 — Additional information record means, M6 — An additional information read-out means, M7 — A signal composition means, M8 — Digital television signal analysis means, M9 — A

video-signal decoding means, M10 — A conversion means, 10 — NTSC signal, 11 [— A video signal, 15 / — A control signal, 16a, 16b / — The addition analysis means, 17 which were coded / — A monitor output signal, 18 / — Additional information is transmitted.] — An additional information display demand signal, 12 — An additional information write request signal, 13 — An additional information playback demand signal, 14 The shown signal, 19 — Additional information, 20 — MPEG 2-Video Stream, 100 — A Rhine 21 analysis means, 101 — An AND circuit, 102 — Additional information detection means, 103 — A code / alphabetic character and an image transformation means, 104 — A frame memory, 105 — Signal composition means, 106, 107 — A switch, 108 — HDD for record, 109 — A code / transliteration means, 110 [Decoder,] — A code / image transformation means, 200 — A stream analysis means, 201 — MPEG 2-Video 202 [— Removable storage means, such as a floppy disk, 400 / — MPEG 2-Video / Still picture decoder.] — The decoder for additional information, 203 — The decoder for the Maine images, 204 — A selector, 300

[Translation done.]

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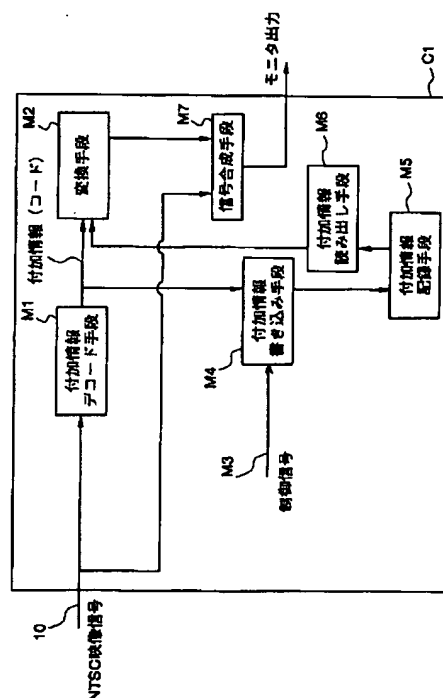
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(54) 【発明の名称】 テレビ受信機、及び付加情報送信方法

(57) 【要約】

【課題】 映像信号とともに文字等の付加情報を送信し、これをユーザの希望に応じて記録してデータベースを作成し、得られたデータベースを活用して、ホームショッピング等に展開する。

【解決手段】 NTSC映像信号10に含まれた付加情報を付加情報デコード手段M1で映像信号10から分離抽出し、この付加情報コードを所定の制御信号M3により制御される付加情報書き込みスイッチ手段M4を用いて付加情報記録手段M5に記録し、必要に応じて読み出し可能とする。変換手段M2では付加情報コードを文字等に変換し、信号合成手段M7に出力する。信号合成手段M7ではNTSC映像信号10と上記文字等に変換された付加情報とが合成されて出力される。



【特許請求の範囲】

【請求項1】 アナログ映像信号を受信するテレビ受信機であって、

上記アナログ映像信号から付加情報コードを分離抽出して出力する付加情報デコード手段と、

該付加情報デコード手段が出力する付加情報コードを記録するための付加情報記録手段と、

上記付加情報デコード手段が出力する付加情報コードを、所定の制御信号に応じて、上記付加情報記録手段に対し通過／遮断する付加情報書き込みスイッチ手段と、

上記付加情報デコード手段が出力する付加情報コードまたは上記付加情報記録手段から読出された付加情報コードを文字または画像に変換する変換手段と、

上記アナログ映像信号と、上記変換手段により文字等に変換された付加情報とを合成してモニタ出力信号として出力する信号合成手段とを備えたことを特徴とするテレビ受信機。

【請求項2】 デジタル符号化されたテレビジョン信号を受信するテレビ受信機であって、

上記デジタル符号化されたテレビジョン信号を解析し、該テレビジョン信号に付加情報が含まれている場合に該含まれている付加情報を上記テレビジョン信号から分離抽出して付加情報コードとして出力するデジタルテレビジョン信号解析手段と、

上記デジタルテレビジョン信号解析手段が出力する付加情報コードを記録するための付加情報記録手段と、

上記デジタルテレビジョン信号解析手段が出力する付加情報コードを、所定の制御信号に応じて、上記付加情報記録手段に対し通過／遮断する付加情報書き込みスイッチ手段と、

上記デジタルテレビジョン信号解析手段が出力する付加情報コードまたは上記付加情報記録手段から読み出された付加情報コードを文字または画像に変換する変換手段と、

上記デジタル符号化されたテレビジョン信号をデコードして映像信号を出力する映像信号デコード手段と、上記映像信号デコード手段から出力される映像信号と、上記変換手段により文字等に変換された付加情報とを合成してモニタ出力信号として出力する信号合成手段とを備えたことを特徴とするテレビ受信機。

【請求項3】 請求項1または2に記載のテレビ受信機において、

上記制御信号は、ユーザが指定した所定の付加情報が検出されたときのみに上記付加情報書き込みスイッチ手段を通過状態とするものであることを特徴とするテレビ受信機。

【請求項4】 デジタル符号化されたテレビジョン信号を受信するテレビ受信機であって、

上記デジタル符号化されたテレビジョン信号を解析し、該テレビジョン信号に付加情報が含まれている場合

に該含まれている付加情報を上記テレビジョン信号から分離抽出して出力するデジタルテレビジョン信号解析手段と、

上記デジタルテレビジョン信号解析手段が出力する付加情報を参照してデジタル符号化されたテレビジョン信号をデコードし、上記付加情報に関連する詳細情報を画像信号として出力する画像信号出力手段と、

上記画像信号出力手段が出力する画像信号を記録するための画像信号記録手段と、

10 上記画像信号出力手段が出力する画像信号を、所定の制御信号に応じて、上記画像信号記録手段に対し通過／遮断する画像信号書き込みスイッチ手段と、

上記デジタル符号化されたテレビジョン信号を復号化して映像信号を出力する映像信号デコード手段と、

上記映像信号デコード手段から出力される映像信号と、上記画像信号出力手段が出力する画像信号または画像信号記録手段から読み出された画像信号とを合成してモニタ出力信号として出力する信号合成手段とを備えたことを特徴とするテレビ受信機。

20 【請求項5】 請求項4記載のテレビ受信機において、デジタルテレビジョン信号解析手段は、上記デジタル符号化されたテレビジョン信号から、詳細情報が含まれるチャンネル番号または静止画番号を付加情報として分離抽出するものであることを特徴とするテレビ受信機。

【請求項6】 請求項4記載のテレビ受信機において、上記制御信号は、ユーザが指定した所定の付加情報が検出されたときのみに上記詳細情報書き込みスイッチ手段を通過状態とするものであることを特徴とするテレビ受信機。

【請求項7】 デジタル符号化されたテレビジョン信号を受信するテレビ受信機であって、

上記デジタル符号化されたテレビジョン信号を解析し、上記デジタル符号化されたテレビジョン信号をデコードして得られる画像の画面上の位置を示す付加情報を上記テレビジョン信号から分離抽出して出力するデジタルテレビジョン信号解析手段と、

モニタ画面上の、上記デジタルテレビジョン信号解析手段が出力する付加情報により指定される位置にアイコンを表示する手段と、

上記アイコンを選択する手段と、アイコンが選択されたときに、デジタル符号化されたテレビジョン信号をデコードし、該アイコンの位置に対応して送信されている詳細情報を画像信号として出力する画像信号出力手段とを備えたことを特徴とするテレビ受信機。

【請求項8】 請求項7記載のテレビ受信機において、上記詳細情報を記録する詳細情報記録手段を備えたことを特徴とするテレビ受信機。

50 【請求項9】 デジタル符号化されたテレビジョン信

号に番組、あるいはコマーシャルとともに、それに関連した別の、もしくはさらに詳細な情報を付加情報として多重したテレビジョン信号を送信する付加情報送信方法において、

上記デジタル符号化されたテレビジョン信号のユーザ用データ領域に送信すべき付加情報を記述して、送信することを特徴とする付加情報送信方法。

【請求項10】 請求項9記載の付加情報送信方法において、

上記付加情報として、

情報提供の対象を示すコードと、

該情報提供の対象の情報を示す文字情報または画像情報のコードとを送信することを特徴とする付加情報送信方法。

【請求項11】 請求項9記載の付加情報送信方法において、

上記付加情報として、

情報提供の対象を示すコードと、

該情報提供の対象の詳細な情報を送信しているチャンネル番号または該情報提供の対象の詳細な情報を表示する静止画の番号とを送信することを特徴とする付加情報送信方法。

【請求項12】 請求項9記載の付加情報送信方法において、

上記付加情報として、

当該デジタル符号化されたテレビジョン信号をデコードして得られる画像の画面上の位置を示すコードと、該位置に対応する詳細な情報を送信しているチャンネル番号または該位置に対応する詳細な情報を表示した静止画の番号とを送信することを特徴とする付加情報送信方法。

【請求項13】 請求項9記載の付加情報送信方法において、

上記デジタル符号化されたテレビジョン信号として、MPEG2-Video ストリームを用いることを特徴とする付加情報送信方法。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明はテレビ受信機、及び、番組、あるいはコマーシャルとともに、それに関連した別の、もしくはさらに詳細な情報を付加情報として多重したテレビジョン信号を送信する付加情報送信方法に関し、特に付加情報を必要に応じて収集記録することができるテレビ受信機、及びMPEG2-Video ストリームに付加情報を多重して送信する方法に関するものである。

【0002】

【従来の技術】近年、テレビジョン放送では、通常の番組、コマーシャルとともに、それに関連した別の、もしくはさらに詳細な情報が、VBI多重、FM多重等により付加情報として多重されたテレビジョン信号を放送す

る、いわゆる多重放送が実用化されている。かかる方式によれば、同じ放送時間でより多くの情報を提供することができる利点がある。しかしながらユーザ側から見れば、これら情報を受け取るためには受信機を多重放送受信モードに設定して、常時付加情報を参照しなければならず、場合によっては情報過多となり、これら氾濫する情報を整理する手だてが必要となってくる。

【0003】

【発明が解決しようとする課題】しかしながら、従来、かかる付加情報を効率よく整理することのできるテレビ受信機がなかったため、ユーザにおいては、受信機を多重放送受信モードに設定してこれら付加情報を受け取り画面上に表示して参照するだけの利用しかなされていないのが現状である。また、受け取った付加情報を記録する方法としては、多重放送受信モードで受け取った情報をそのままビデオレコーダ等で録画することが考えられるが、この場合、必要とする付加情報のみを記録するためには、画面上に表示された付加情報を参照しながら必要とする付加情報が現れたときにビデオレコーダ等の録画操作を行なうという極めて煩雑な作業を繰り返さなければならないという問題があった。

【0004】本発明は、かかる現状に鑑みてなされたものであり、放送されている番組の裏で同時に放送されている付加情報をユーザの希望により必要に応じて取捨選択して整理し、データベース化して用いることのできる機能を備えたテレビ受信機を得ることを目的とする。

【0005】また、上記テレビ受信機をデジタル放送に適用し、画面上の所定場所に表示されたアイコンを、ユーザの希望で選択して必要な付加情報のみを取り出すことができるテレビ受信機を得ることを目的とする。

【0006】また、本発明は、デジタル符号化されたテレビジョン信号に効率よく付加情報を多重して送信する付加情報送信方法を提供することを目的とする。

【0007】

【課題を解決するための手段】上記目的を達成するために、本願の請求項1にかかる発明は、アナログ映像信号を受信するテレビ受信機であって、上記アナログ映像信号から付加情報コードを分離抽出して出力する付加情報デコード手段と、該付加情報デコード手段が出力する付加情報コードを記録するための付加情報記録手段と、上記付加情報デコード手段が出力する付加情報コードを、所定の制御信号に応じて、上記付加情報記録手段に対し通過／遮断する付加情報書き込みスイッチ手段と、上記付加情報デコード手段が出力する付加情報コードまたは上記付加情報記録手段から読出された付加情報コードを文字または画像に変換する変換手段と、上記アナログ映像信号と、上記変換手段により文字または画像に変換された付加情報とを合成してモニタ出力信号として出力する信号合成手段とを備えたものである。

【0008】また、本願の請求項2にかかる発明は、デ

ィジタル符号化されたテレビジョン信号を受信するテレビ受信機であって、上記ィジタル符号化されたテレビジョン信号を解析し、該テレビジョン信号に付加情報が含まれている場合に該含まれている付加情報を上記テレビジョン信号から分離抽出して付加情報コードとして出力するィジタルテレビジョン信号解析手段と、上記ィジタルテレビジョン信号解析手段が出力する付加情報コードを記録するための付加情報記録手段と、上記ィジタルテレビジョン信号解析手段が出力する付加情報コードを、所定の制御信号に応じて、上記付加情報記録手段に対し通過／遮断する付加情報書き込みスイッチ手段と、上記ィジタルテレビジョン信号解析手段が出力する付加情報コードまたは上記付加情報記録手段から読み出された付加情報コードを文字または画像に変換する変換手段と、上記ィジタル符号化されたテレビジョン信号をデコードして映像信号を出力する映像信号デコード手段と、上記映像信号デコード手段から出力される映像信号と、上記変換手段により文字等に変換された付加情報とを合成してモニタ出力信号として出力する信号合成手段とを備えたものである。

【0009】また、本願の請求項3にかかる発明は、上記請求項1または2に記載のテレビ受信機において、上記制御信号が、ユーザが指定した所定の付加情報が検出されたときのみに上記付加情報書き込みスイッチ手段を通過状態とするようにしたものである。

【0010】また、本願の請求項4にかかる発明は、ィジタル符号化されたテレビジョン信号を受信するテレビ受信機であって、上記ィジタル符号化されたテレビジョン信号を解析し、該テレビジョン信号に付加情報が含まれている場合に該含まれている付加情報を上記テレビジョン信号から分離抽出して出力するィジタルテレビジョン信号解析手段と、上記ィジタルテレビジョン信号解析手段が出力する付加情報を参照してィジタル符号化されたテレビジョン信号デコードし、上記付加情報に関連する詳細情報を画像信号として出力する画像信号出力手段と、上記画像信号出力手段が出力する画像信号を記録するための画像信号記録手段と、上記画像信号出力手段が出力する画像信号を、所定の制御信号に応じて、上記画像信号記録手段に対し通過／遮断する画像信号書き込みスイッチ手段と、上記ィジタル符号化されたテレビジョン信号を復号化して映像信号を出力する映像信号デコード手段と、上記映像信号デコード手段から出力される映像信号と、上記画像信号出力手段が出力する画像信号または画像信号記録手段から読み出された画像信号とを合成してモニタ出力信号として出力する信号合成手段とを備えたものである。

【0011】また、本願の請求項5にかかる発明は、上記請求項4記載のテレビ受信機において、上記ィジタルテレビジョン信号解析手段が、上記ィジタル符号化されたテレビジョン信号から、詳細情報が含まれるチャ

ネル番号または静止画番号を付加情報として分離抽出するものとしたものである。

【0012】また、本願の請求項6にかかる発明は、上記請求項4記載のテレビ受信機において、上記制御信号が、ユーザが指定した所定の付加情報が検出されたときのみに上記詳細情報書き込みスイッチ手段を通過状態とするようにしたものである。

【0013】また、本願の請求項7にかかる発明は、ィジタル符号化されたテレビジョン信号を受信するテレビ受信機であって、上記ィジタル符号化されたテレビジョン信号を解析し、上記ィジタル符号化されたテレビジョン信号をデコードして得られる画像の画面上の位置を示す付加情報を上記テレビジョン信号から分離抽出して出力するィジタルテレビジョン信号解析手段と、モニタ画面上の、上記ィジタルテレビジョン信号解析手段が出力する付加情報により指定される位置にアイコンを表示する手段と、上記アイコンを選択する手段と、アイコンが選択されたときに、ィジタル符号化されたテレビジョン信号をデコードし、該アイコンの位置に対応して送信されている詳細情報を画像信号として出力する画像信号出力手段とを備えたものである。

【0014】また、本願の請求項8にかかる発明は、上記請求項7記載のテレビ受信機において、上記詳細情報を記録する詳細情報記録手段を備えたものである。

【0015】また、本願の請求項9にかかる発明は、ィジタル符号化されたテレビジョン信号に番組、あるいはコマーシャルとともに、それに関連した別の、もしくはさらに詳細な情報を付加情報として多重したテレビジョン信号を送信する付加情報送信方法において、上記ィジタル符号化されたテレビジョン信号のユーザ用データ領域に送信すべき付加情報を記述して、送信するようにしたものである。

【0016】また、本願の請求項10にかかる発明は、上記請求項9記載の付加情報送信方法において、上記付加情報として、情報提供の対象を示すコードと、該情報提供の対象の情報を示す文字情報または画像情報のコードとを送信するようにしたものである。

【0017】また、本願の請求項11にかかる発明は、上記請求項9記載の付加情報送信方法において、上記付加情報として、情報提供の対象を示すコードと、該情報提供の対象の詳細な情報を送信しているチャンネル番号または該情報提供の対象の詳細な情報を表示する静止画の番号とを送信するようにしたものである。

【0018】また、本願の請求項12にかかる発明は、上記請求項9記載の付加情報送信方法において、上記付加情報として、当該ィジタル符号化されたテレビジョン信号をデコードして得られる画像の画面上の位置を示すコードと、該位置に対応する詳細な情報を送信しているチャンネル番号または該位置に対応する詳細な情報を表示した静止画の番号とを送信するようにしたものであ

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【0019】また、本願の請求項13にかかる発明は、上記請求項9記載の付加情報送信方法において、上記デジタル符号化されたテレビジョン信号として、MPEG2-Video ストリームを用いるようにしたものである。

【0020】

【発明の実施の形態】

実施の形態1. 本願発明の実施の形態1におけるテレビ受信機は、図1に示すように、NTSC (National Television System Committee) 映像信号(10)を受信するテレビ受信機において、上記NTSC映像信号から付加情報コードを分離抽出して出力する付加情報デコード手段(M1)と、該付加情報デコード手段が出力する付加情報コードを記録するための付加情報記録手段(M5)と、上記付加情報デコード手段(M1)が出力する付加情報コードを、所定の制御信号(M3)に応じて、上記付加情報記録手段(M5)に対し通過/遮断する付加情報書き込みスイッチ手段(M4)と、上記付加情報デコード手段(M1)が出力する付加情報コードまたは上記付加情報記録手段(M5)から読出された付加情報コードを文字または画像に変換する変換手段(M2)と、上記NTSC映像信号と、上記変換手段(M2)により文字または画像に変換された付加情報とを合成してモニタ出力信号として出力する信号合成手段(M7)とを備えたものであり、本実施の形態1によるテレビ受信機は、かかる構成により、通常の番組、コマーシャルとともに、それに関連した別の、もしくはさらに詳細な情報が付加情報として多重されたテレビジョン信号から、必要な情報を選択して収集、記録することができ、この収集、記録された付加情報をデータベースとして様々な利用することができる。

【0021】ここで、制御信号(M3)としては、ユーザが付加情報を記録することを外部から直接要求する記録要求信号を用いることができる。また、ユーザが記録することを望む付加情報を示すコード(キーワード)を保持し、付加情報デコード手段(M1)が出力する付加情報コードがこのキーワードを有する場合に付加情報書き込みスイッチ手段(M4)を通過状態とする信号を出力するコード比較手段を設け、このコード比較手段の出力を制御信号(M3)として用いる構成とすることも可能である。このようなコード比較手段を設けることにより、あらかじめキーワードを設定しておけば、いちいちユーザが付加情報を記録することを外部から直接要求することなく、一定時間経過後には所望する付加情報のみを付加情報記録手段(M5)に蓄積することができる。

【0022】実施の形態2. 本願発明の実施の形態2におけるテレビ受信機は、図2に示すように、デジタル符号化された映像信号20を受信するテレビ受信機において、上記デジタル符号化された映像信号20を解析し、該映像信号に付加情報が含まれている場合に該含

れている付加情報を上記映像信号から分離抽出して付加情報コードとして出力するデジタルテレビジョン信号解析手段(M8)と、上記デジタルテレビジョン信号解析手段(M8)が出力する付加情報コードを記録するための付加情報記録手段(M5)と、上記デジタルテレビジョン信号解析手段(M8)が出力する付加情報コードを、所定の制御信号(M3)に応じて、上記付加情報記録手段(M5)に対し通過/遮断する付加情報書き込みスイッチ手段(M4)と、上記デジタルテレビジョン信号解析手段(M8)が出力する付加情報コードまたは上記付加情報記録手段(M5)から読出された付加情報コードを文字等に変換する変換手段(M10)と、上記デジタル符号化された映像信号を復号化して映像信号を出力する映像信号デコード手段(M9)と、上記映像信号デコード手段(M9)から出力される映像信号と、上記変換手段(M10)により文字等に変換された付加情報とを合成してモニタ出力信号として出力する信号合成手段(M7)とを備えたものであり、本実施の形態2によるテレビ受信機は、かかる構成により、通常の番組、コマーシャルとともに、それに関連した別の、もしくはさらに詳細な情報が付加情報として多重されたテレビジョン信号から、必要な情報を選択して収集、記録することができ、この収集、記録された付加情報をデータベースとして様々な利用することができる。

【0023】ここで、上記実施の形態1におけるテレビ受信機と同様、制御信号(M3)としては、ユーザが付加情報を記録することを外部から直接要求する記録要求信号を用いることができる。また、ユーザが記録することを望む付加情報を示すコード(キーワード)を保持し、付加情報デコード手段が出力する付加情報コードがこのキーワードを有する場合に付加情報書き込みスイッチ手段(M4)を通過状態とする信号を出力するコード比較手段を設け、このコード比較手段の出力を制御信号(M3)として用いる構成とすることも可能である。このようなコード比較手段を設けることにより、あらかじめキーワードを設定しておけば、いちいちユーザが付加情報を記録することを外部から直接要求することなく、一定時間経過後には所望する付加情報のみを付加情報記録手段(M5)に蓄積することができる。

【0024】

【実施例】

実施例1. 以下、上記実施の形態1に基づいた、本願発明の実施例1によるテレビ受信機を図3について説明する。図3において、11は付加情報を表示したい場合にユーザが入力する付加情報表示要求信号、12は表示されている付加情報を記録するためのユーザからの記録要求信号であり、この記録要求信号12は、図1に示す制御信号M3に相当する。13は記録された付加情報を再生するためのユーザからの再生要求信号である。また100は、上記NTSC信号10を入力とし、付加情報が

送信されているか否か判定を行うために第21ラインを検出するライン21解析手段である。101は上記付加情報表示要求信号11と、ライン21解析手段100で付加情報が送信されている状態であることを示す信号18を入力とするAND回路であり、これら信号に基づいて後述する付加情報デコード手段102をオン/オフ制御するためのものである。102は図1に示された付加情報デコード手段M1に相当するもので、上記解析手段100をスルーした映像信号14を受け、上記AND回路101から出力される制御信号15によりオン状態となったときに、映像信号14に含まれる付加情報を分離抽出して出力する付加情報デコード手段、103は図1の変換手段M2に相当するもので、付加情報コード16a、16bを文字もしくは画像に変換するコード/文字・画像変換手段、104は文字等に変換された付加情報を一時的に蓄積するためのフレームメモリ、105はNTSC映像信号10と上記フレームメモリ104に蓄積された付加情報信号とを合成してモニタ出力信号17とする信号合成手段である。これらフレームメモリ104、及び信号合成手段105が、図1に示す信号合成手段M7に相当する。108は図1に示す付加情報記録手段M5に相当するもので、付加情報デコード手段102が出力した付加情報コードを記録、蓄積するための、例えばHDD（ハードディスクドライブ）等の記録媒体である。また、106は記録要求信号12が入力された場合に、付加情報デコード手段102が出力する付加情報コード16aを、記録用HDD108に記録することを許可するスイッチであり、図1に示す付加情報書き込みスイッチ手段M4に相当する。107は記録用HDD108に記録された付加情報を再生要求信号13が入力された時に読み出し、コード/文字・画像変換手段103に出力するためのスイッチである。

【0025】次に上記実施例1のテレビ受信機の動作について説明する。受信するNTSC映像信号10としては、付加情報送信となっていることを通知するために、例えば、図4(a)に示すように、垂直帰線期間（VBI=Vertical Blanking Interval）を利用して多重を行い、第21ラインに次に商品コードが送られてくることを知らせる波形を設け、他のライン、例えば第22ラインで文字コード（例えばJISコード）を送る（図4(b)参照）。ここで例えば、上記パルス幅Tを $T=1/(4 \times f_{sc})$ とすると、NTSC方式では色サブキャリア周波数 f_{sc} は3.58MHzであるので、パルス幅Tは70nsecとなる。したがって、1ラインでは910ドットであるが、ここには既に水平同期パルスやカラーバーストで使用されている部分があり、これを除くと信号に使用できる有効長は一般に768ドットである。漢字を使用するのであれば1文字のコーディングに16bit（ドット）分必要であるため、結局、1ライン当たり $768/16=48$ 文字伝送できることになる。

【0026】なお、ここで文字に代えて図形情報をビットマップにて送信することが可能であるが、NTSC方式では、伝送容量的な限界がある。たとえば、画像データを8ビット解像度で、Red/Blue/Greenの順に24ビット送るものとする、768（ドット）/24=32（ドット）分のデータを1ラインで送ることができ、 256×256 のサイズのビットマップを送信するには、 $256 \times 256/32=2048$ （ライン）必要となり、1フィールドで1ライン使用するとすれば、2048フィールドが必要となる。一般に60フィールド/秒であるから、かかるビットマップの送信には、 $2048/60=34$ 秒かかることになり、従って実用的に伝送できる映像データの大きさには限度がある。

【0027】続いて、付加情報表示要求信号11と付加情報送信中であることを示す信号18の両方がAND回路101に入力されると、付加情報デコード手段102はオン状態となり、上述したように、映像信号14に含まれる、1ライン当たり48文字の付加情報コードを映像信号から分離抽出して出力する。この付加情報コード16aは、記録要求信号12が入力された場合にはスイッチ106がオンして記録用HDD108に記録されるとともに、コード/文字・画像変換手段103により文字に変換されて、1画面分の文字データ等がフレームメモリ104に蓄積される。信号合成手段105では、NTSC映像信号10と、上記フレームメモリ104に蓄積された1画面分の文字データ等とを合成してモニタ出力信号17を出力する。

【0028】一方、上述の動作によって、記録用HDD108に蓄積された付加情報コードは、ユーザからの再生要求信号13が入力された場合、スイッチ107がオンして記録用HDD108から付加情報のデータ16bが読み出され、コード/文字・画像変換手段103により文字情報に変換され、1画面分の情報がフレームメモリ104で蓄積された後、信号合成手段105を介してモニタ出力信号17として出力される。このとき、NTSC映像信号10が入力されている場合には、現在受信中の映像信号と合成して文字データが表示され、またNTSC映像信号10を受信していない場合には、画面に文字情報だけが表示される。上記信号合成手段105による映像信号と文字データとの合成の方式は、例えば、2画面分割して表示する等の方法が挙げられる。

【0029】なお、以上の説明ではユーザからの記録要求信号11が入力されたタイミングでコード化された付加情報16aが記録される場合について説明したが、例えばコマーシャルの場合には、ユーザが希望する商品コードを予め予約しておき、第21ラインで送信されてきた商品コードと比較してこれが一致する場合にのみ当該付加情報を記録用HDD108に記録するようにしてもよい。このようにすることで、一定時間後には自動的にユーザが所望とする情報が蓄積されたデータベースが作

成されるようになる。

【0030】このように、本実施例1によれば、NTSC方式のテレビ受信機において、通常の映像とともに送信される付加情報を付加情報デコード手段102を用いて分離抽出し、ユーザの要求に応じてこれを記録用HDD108に記録する一方、ユーザからの再生要求信号13によって上記記録された付加情報を取り出し、表示可能としたから、リアルタイムで表示される付加情報をカタログ化して、いつでも必要な時に取り出して参照でき、付加情報の有効利用が図れる効果がある。また、ユーザが希望する付加情報の種類を予め予約しておくことで、所望とする付加情報のみを選択して、しかも自動的に付加情報がカタログ化され、ユーザ側から見れば一定時間後には知らない間に付加情報を収集することができ、効率の良い情報収集が可能である。

【0031】実施例2。次に、上記実施の形態2に基づいた、本願発明の実施例2によるテレビ受信機を図5について説明する。本実施例2はデジタル符号化されたテレビジョン信号がMPEG2-Video ストリームであるテレビ受信機である。図5において、200は図2に示すデジタルテレビジョン信号解析手段M8に相当するもので、MPEG2-Video ストリーム20を入力とし、該ストリーム20から文字等の付加情報コードを分離抽出して出*

```
0000 0000 0000 0000 0000 0000 1011 0010 ...User Data Start Code(0xB2)
0000 0100 ...付加情報であることを示す識別子
0110 0110 ...商品コード24ビットのうちの最初の8ビット
1111 1111 ...商品コード24ビットのうちの次の8ビット
0000 0000 ...商品コード24ビットのうちの最後の8ビット
0011 1011 ...1つの漢字を示す16ビットのうちの上位8ビット
1100 1101 ...1つの漢字を示す16ビットのうちの下位8ビット
.
.
.
0000 0000 0000 0000 0000 0001 ...ユーザデータの終わりを示すコード
```

従って上記ストリーム解析手段200では上述のようなフォーマットのストリームを受けることで現在のストリームが付加情報('0000 0100')であり、商品コード('0100 0110 1111 1111 0000 0000')に関するものであることが識別できる。なお、文字データはユーザデータの終わりを示すコードを送るまでいくらでも送りつづけることができる。

【0033】一方、MPEG2-Video デコーダ201では入力されたMPEG2-Video ストリーム20に含まれる映像情報を映像信号14に変換して信号合成手段105に対して出力する。上記ストリーム解析手段200から出力された付加情報コード16aはコード/文字変換手段103によりコードから文字への変換が行われ、1画面分のデータとしてフレームメモリに蓄積される。このとき、ユーザからの記録要求信号12が入力されれば、スイッチ106がオンして、ストリーム解析手段200から出力された付加情報コード16aは記録用HDD108に

*力するストリーム解析手段である。このストリーム解析手段200はユーザからの付加情報表示要求信号11を受けることによってオン/オフ動作が制御されるようになっている。201は図2に示す映像信号デコード手段M9に相当するもので、上記MPEG2-Video ストリーム20を入力とし、該符号化された映像情報を通常の映像信号14に変換するMPEG2-Video デコーダである。その他の部分は図3に示す実施例1において同一符号を付した部分と同様のものである。

10 【0032】以下、上記実施例2のテレビ受信機の動作について説明する。受信するMPEG2-Video ストリーム20には所定のフォーマットにて映像情報、文字情報等が格納されており、ユーザからの表示要求信号11が入力された場合、ストリーム解析手段200はオン状態となり、上記MPEG2-Video ストリーム20に含まれる文字等の付加情報を取り出しこれを信号16aとして出力する。上記付加情報はMPEG規格内の User Data (ユーザ用データ) 領域(8ビット)を独自に定義して使用する方法が考えられる。すなわち、付加情報であることの識別子を、例えば、'0000 0100' とし、ある商品コードを、'0110 0110 1111 1111 0000 0000' とするなら、次のように定義する。

書き込まれる。上記フレームメモリ104に蓄積された付加情報は、信号合成手段105によって、MPEG2-Video デコーダ201から出力された映像信号104と合成されてモニタ出力信号17となる。

【0034】また、上記記録用HDD108に蓄積された付加情報は、ユーザからの再生要求信号13が入力されるとスイッチ107がオンして記録用HDD108から読み出され、上記実施例1の場合と同様にしてコード/文字変換手段103、フレームメモリ104、信号合成手段105を経てモニタ出力信号17となって、例えば、2画面分割等されてモニタ上に表示される。

【0035】なお、この実施例においても、上記実施例1と同様に、例えばコマーシャルの場合には、ユーザが希望する商品コードを予め予約しておき、ストリーム解析手段200で送信されてきたMPEG2-Video ストリームに含まれる商品コードと比較してこれが一致する場合にのみ当該付加情報を記録用HDD108に記録するよう

にしてもよい。このようにすることで、一定時間後には自動的にユーザが所望とする情報が蓄積されたデータベースが作成されるようになる。

【0036】このように、本実施2によれば、MPEG2-Video方式を用いたデジタル式のテレビ受信機において、通常の映像とともに送信される付加情報をストリーム解析手段200で解析して付加情報コード16aのみを取り出し、ユーザの要求に応じてこれを記録用HDD108に記録する一方、ユーザからの再生要求信号13によって上記記録された付加情報を取り出し、表示可能としたから、リアルタイムで表示される付加情報をカタログ化して、いつでも必要な時に取り出して参照でき、付加情報の有効利用を図れる効果がある。また、ユーザが希望する付加情報の種類を予め予約しておくことで、所望とする付加情報のみを選択して、しかも自動的に付加情報がカタログ化され、ユーザ側から見れば一定時間後には知らない間に付加情報を収集することができ、効率の良い情報収集が可能である。

【0037】実施例3. 次に、上記実施の形態2に基づいた、本願発明の実施例3によるテレビ受信機を図6について説明する。図6において、109はストリーム解析手段200によりMPEG2-Videoストリーム20から分離抽出された付加情報(ビットマップコードで表示される画像データ)を通常の画像信号に変換するコード/画像変換手段、300は記憶用HDD108との間でデータのやりとりを行うことが可能なフロッピーディスク等のリムーバブルな記録媒体であり、その他の部分は図5に示す実施例2において同一符号を付した部分と同様のものである。

【0038】以下、上記実施例3のテレビ受信機の動作について説明する。付加情報コードの記録、読み出しの基本的な動作は上記実施例2のテレビ受信機と同一であるが、ここでは付加情報として文字ではなく画像データを扱うために付加情報はビットマップ形式となっており、信号合成手段105で映像信号14と合成するために、コード/画像変換手段109でコードから画像にデータが変換されるように構成されている点異なる。このようにMPEG2-Videoフォーマットを利用することで、付加情報としては文字情報以外にも図形情報等の情報量が比較的大きいものも付加情報として取り扱うことができ、放送の多重化の範囲を広げることができる。

【0039】また、リムーバブルな記録媒体300は、例えば、記録用HDD108に蓄積した付加情報は通常、これを読み出してモニタ上に表示することによりユ*

*一ザが利用することができるが、例えば第3者と必要な情報を交換したりする場合には、該記録用HDDに蓄積した付加情報のうち、所望とするものを選択して外部に取り出し、リムーバブルな記録媒体300に書き出し、これを受け取った相手は該記録媒体300に記録された付加情報を自分の記録用HDD108に書き込むことにより、第三者が作成した付加情報を自分のデータベース中に取り込むことができ、情報交換等に役立つという効果がある。なお、このようなリムーバブルな記録媒体300は、上記実施例1、及び実施例2にもこれを適用でき、同様の効果を奏するものである。

【0040】実施例4. 次に、本願発明の実施例4によるテレビ受信機を図7について説明する。上記実施例2及び実施例3では、送信するMPEG2-Videoストリーム20のMPEG規格内のUser Data領域に付加情報そのものを記述するものであったが、本実施例4では、User Data領域に、詳細情報が載っているチャンネル番号もしくは静止画番号のみを付加情報として記述するようにしている点が上記実施例2及び実施例3に比べて大きく異なる。すなわち図7において、400はストリーム解析手段200で取り出された付加情報(チャンネル番号または静止画番号)信号19を入力とし、付加情報により指定された、MPEG2-Videoストリーム20のチャンネル、あるいは付加情報により指定された静止画をデコードするMPEG2-Video静止画デコーダである。本実施例4では、付加情報に基づいて、MPEG2-Video静止画デコーダ400でMPEG2-Videoストリーム20をデコードして画像信号として出力し、この画像信号を記録用HDD108に記録する構成としている。

【0041】以下、上記実施例4のテレビ受信機の動作について説明する。ストリーム解析手段200ではMPEG2-Videoストリーム20に含まれる、付加情報であることを識別するコード、商品コード、詳細情報の載っているチャンネル番号(または静止画の番号)を検出し、後段のMPEG2-Video静止画デコーダでは上記検出されたチャンネルに続くチャンネル番号(静止画番号)に従って当該チャンネル(画像)をデコードする。上記付加情報はMPEG規格内のUser Data(ユーザ用データ)領域(8ビット)を独自に定義して使用方法が考えられる。すなわち、付加情報であることの識別子を、例えば、'0000 0100'とし、ある商品コードを、'0110 0110 1111 1111 0000 0000'とするなら、次のように定義する。

```
0000 0000 0000 0000 0000 0000 1011 0010 ...User Data Start Code(0xB2)
0000 0100 ...付加情報であることを示す識別子
0110 0110 ...商品コード24ビットのうちの最初の8ビット
1111 1111 ...商品コード24ビットのうちの次の8ビット
0000 0000 ...商品コード24ビットのうちの最後の8ビット
0011 1011 ...詳細情報の載っているチャンネル番号(または静止画番号)
```


0000 0000 0000 0000 0000 0001 …ユーザデータの終わりを示すコード

従って上記ストリーム解析手段200では上述のようなフォーマットのストリームを受けることで現在のストリームが付加情報 ('0000 0100') であり、商品コード ('0100 0110 1111 1111 0000 0000') に関するものであることを識別でき、続くチャンネル番号、あるいは静止画番号の情報に基づいて、MPEG2-Video静止画デコーダ400でMPEG2-Video ストリームをデコードすることによって、詳細情報である画像信号を得る。得られた画像信号はフレームメモリ104に記憶される。このとき、ユーザからの記録要求信号12が入力されていればスイッチ106がオンして当該詳細情報である画像信号は記録用HDD108に記録される。一方、MPEG2-Video デコーダ201は入力されたMPEG2-Video ストリーム20の上記付加情報を含むチャンネルの動画を通常のデコード動作により映像信号14に変換して信号合成手段105に出力する。そして、映像信号14は、フレームメモリ104に記憶された、MPEG2-Video 静止画デコーダ400によりデコードされた画像信号と合成されてモニタ信号17として出力される。合成方法としては上記各実施例と同様に、2画面分割やオーバーラップ形式が考えられる。また、上述のようにして記録用HDD108に蓄積された画像信号は、ユーザからの再生要求信号13が入力されると、スイッチ107がオンしてフレームメモリ104に呼び出され、ここで1画面分のデータとなって現在受信中の映像信号があれば、信号合成手段105にてそれと合成されてモニタ信号17として出力される。

【0042】このように本実施例4によれば、MPEG2-Video ストリーム20のMPEG規格内の User Data領域に詳細情報が載っているチャンネル番号もしくは静止画の番号を付加情報として記述したものとし、この付加情報に基づいてMPEG2-Video 静止画デコーダ400でMPEG2-Video ストリーム20をデコードして得られた画像信号とMPEG2-Video デコーダ201でMPEG2-Video ストリーム20をデコードして得られた映像信号14とを信号合成手段105で合成するようにしたから、付加情報データを一括的に管理することができる。

【0043】なお、付加情報をMPEG2-Video レイヤで記述する代わりに、MPEG2-Systems における記述を別途同様に定義してもよく、全く同様の効果が得られる。以下、これを図8を用いて説明する。図8において、ストリーム解析手段200は、ビデオ、オーディオ、データの混在したMPEG2-Systems ビットストリーム20 (システムストリーム) を受け、ユーザが今視聴しているビデオのストリームをメインのデコーダ203に供給する。またこのMPEG2-Systems ビットストリームに付随した付

加映像データ (ただしこれが存在する場合のみ) を付加情報用デコーダ202に供給する。

【0044】それぞれのデコーダ201、202は入力されたそれぞれのストリームをデコードし、映像信号に変換する。どのストリームが今視聴者の視聴しているビデオストリームの付加情報なのかは、MPEG2-Systemで規定される構文にのっとってユーザ定義領域で独自に定義される。ここで、付加情報は静止画である必要はない。特にデジタル伝送では動画の伝送も容易である。

【0045】もしユーザからの記録要求12があれば、記録用HDD108にストリームのまま記録する。このとき、圧縮されたままの情報で記録することが可能となるため、記録媒体の容量を有効に利用できる。

【0046】そしてユーザからの再生要求信号13が入力されると、セクタ204により、記録用HDD108から読み出された付加情報ストリームのみが付加情報用デコーダ202に供給されて、該デコーダ202に202でデコードされ、該デコードされた付加情報はメイン画像のデコード結果 (メイン画像用デコーダ203の出力) と信号合成手段105で合成され、モニタ出力信号17として出力される。このモニタ上での出力形式としては、ともに動画である、左右2画面分割形式、ピクチャー・イン・ピクチャー形式等が考えられる。なお、以上の実施例において用いてきた、MPEG2-System, MPEG2-Video は、国際基準として規定されている規格である。

【0047】また、上記各実施例で蓄積したデータをブラウン管に表示するだけではなく、プリンタ等の印刷装置に出力するようにしてもよい。

【0048】さらに、上記各実施例を双方向通信形式のものとし、蓄積したデータを基にしてホームショッピング (例えば、MTS: Mutual Text System) に対応させるようにしてもよい。

【0049】また、上記各実施例では、付加情報のみを記録用HDD108に記録するようにしたが、付加情報とともに映像信号を記録するようにしてもよい。この場合、付加情報が重畳されるタイミングがその映像信号よりも遅れて行われるために、付加情報に基づいて映像信号を記録するためには、例えば約15秒程度の映像信号を蓄積できる容量を有する画像メモリを設けておく必要がある。

【0050】さらに、上記実施例2ないし実施例4では、付加情報の内容または付加情報のチャンネル番号もしくは静止画番号を記録するようにしたが、アイコンを画面上に表示させて、そのアイコンを選択することにより詳細情報を取得する構成としてもよい。

【0051】すなわち、詳細情報を有する対象物、例えば商品が表示されている画面上の位置とその詳細情報とを送信時に関連して定義付けしておくことで、受信側ではユーザの指定に従ってアイコンを上記詳細情報を有する商品が表示されている画面上の位置に表示し、ユーザによるアイコン選択に応じて、選択されたアイコンの位置に対応する詳細情報を別のチャンネル、または静止画をデコードすることによって取得し、これを画面上に表*

```
0000 0000 0000 0000 0000 0000 1011 0010 ...User Data Start Code(0xB2)
0000 0100 ...付加情報であることを示す識別子
0000 0000 ...X座標を表現する16ビットのうちの上位8ビット
1000 0000 ...X座標を表現する16ビットのうちの下部8ビット
0000 0001 ...Y座標を表現する16ビットのうちの上位8ビット
0000 0000 ...Y座標を表現する16ビットのうちの下部8ビット
0110 0110 ...商品コード24ビットのうちの最初の8ビット
1111 1111 ...商品コード24ビットのうちの次の8ビット
0000 0000 ...商品コード24ビットのうちの最後の8ビット
0011 1011 ...詳細情報の載っているチャンネル番号(または静止画番号)
1100 1101 ...詳細情報の載っているチャンネル番号(または静止画番号)
.
.
.
0000 0000 0000 0000 0000 0001 ...ユーザデータの終わりを示すコード
```

このような付加情報に基づき、受信側のデコーダは、ユーザの要求に応じて、記述された画面上の座標位置、例えば(128, 256)の座標位置にアイコンを表示し、ユーザがリモコン等により該アイコンを選択したときに、詳細情報の載っているチャンネル、または静止画をデコードし、その座標位置に表示されている商品等の詳細情報を画面上に表示することができる。そして上記各実施例と同様に必要に応じて記録、印字することも可能である。また、本実施例においても、付加情報の記述をMPEG2-Systemのユーザ定義領域を使用しても全く同じ効果が得られる。

【図面の簡単な説明】

【図1】 本発明の実施の形態1にかかるテレビ受信機の付加情報取り込み回路の構成を示すブロック図である。

【図2】 本発明の実施の形態2にかかるテレビ受信機の付加情報取り込み回路の構成を示すブロック図である。

【図3】 本発明の実施例1にかかるテレビ受信機の付加情報取り込み回路の構成を示すブロック図である。

【図4】 上記実施例1のテレビ受信機に入力されるNTSC信号の付加情報の始まりを示すラインの波形を示す図(図4(a))、及びNTSC信号の付加情報のデータを示すラインの波形を示す図(図4(b))である。

【図5】 本発明の実施例2にかかるテレビ受信機の付加情報取り込み回路の構成を示すブロック図である。

【図6】 本発明の実施例3にかかるテレビ受信機の付加情報取り込み回路の構成を示すブロック図である。

* 示し、必要に応じて記録することができる。

【0052】付加情報の記述例としては、MPEG規格内のユーザ用データ領域を独自に定義して使用方法が考えられる。すなわち、付加情報であることの識別子を、例えば、'0000 0100'とし、ある商品コードを、'0110 0110 1111 1111 0000 0000'とするなら、次のように定義する。

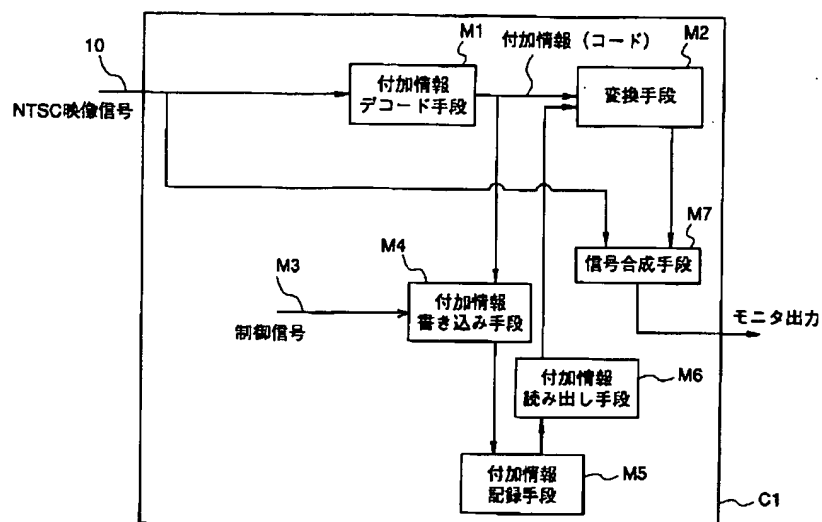
【図7】 本発明の実施例4にかかるテレビ受信機の付加情報取り込み回路の構成を示すブロック図である。

【図8】 本発明の実施例4にかかるテレビ受信機において、MPEG2-systems規格を用いた場合の付加情報取り込み回路の構成を示すブロック図である。

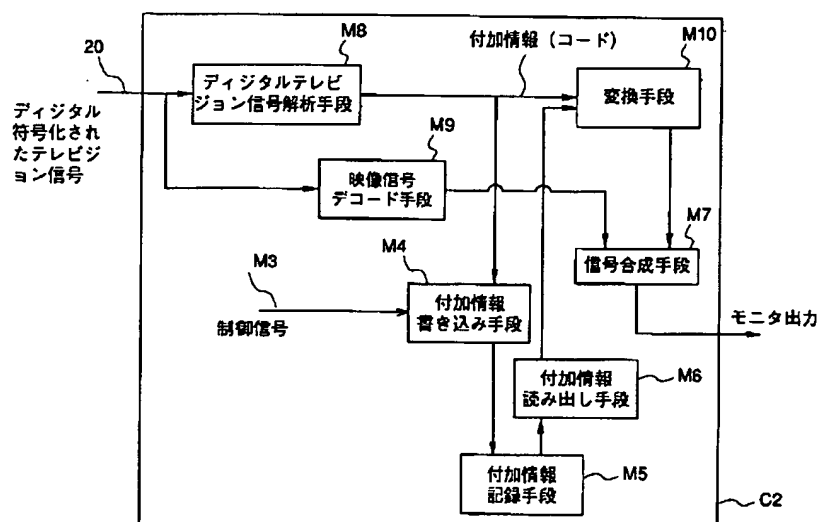
【符号の説明】

C1, C2...付加情報取り込み回路、M1...付加情報デコード手段、M2...変換手段、M3...制御信号、M4...付加情報書き込みスイッチ手段、M5...付加情報記録手段、M6...付加情報読み出し手段、M7...信号合成手段、M8...デジタルテレビジョン信号解析手段、M9...映像信号デコード手段、M10...変換手段、10...NTSC信号、11...付加情報表示要求信号、12...付加情報書き込み要求信号、13...付加情報再生要求信号、14...映像信号、15...制御信号、16a, 16b...コード化された付加解析手段、17...モニタ出力信号、18...付加情報が送信されていることを示す信号、19...付加情報、20...MPEG2-Video ストリーム、100...ライン21解析手段、101...AND回路、102...付加情報デコード手段、103...コード/文字・画像変換手段、104...フレームメモリ、105...信号合成手段、106, 107...スイッチ、108...記録用HDD、109...コード/文字変換手段、110...コード/画像変換手段、200...ストリーム解析手段、201...MPEG2-Video デコーダ、202...付加情報用デコーダ、203...メイン画像用デコーダ、204...セレクタ、300...フロッピーディスク等のリムーバブルな記憶手段、400...MPEG2-Video 静止画デコーダ。

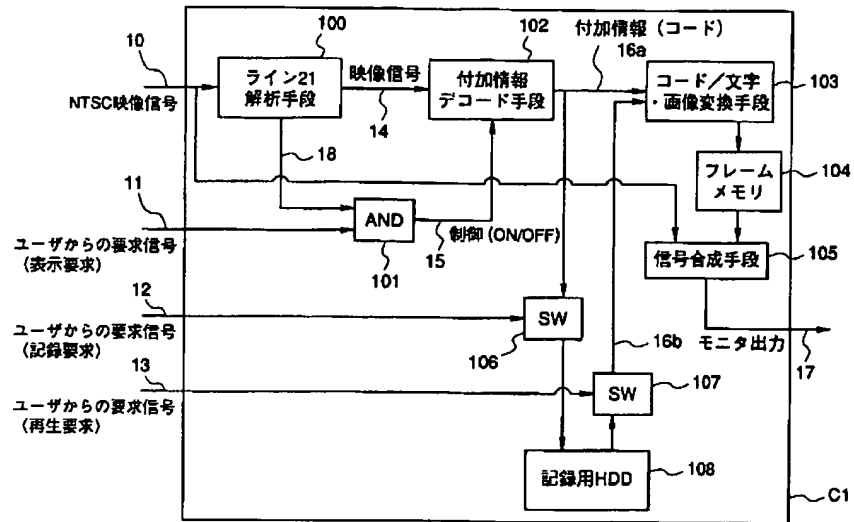
【図1】



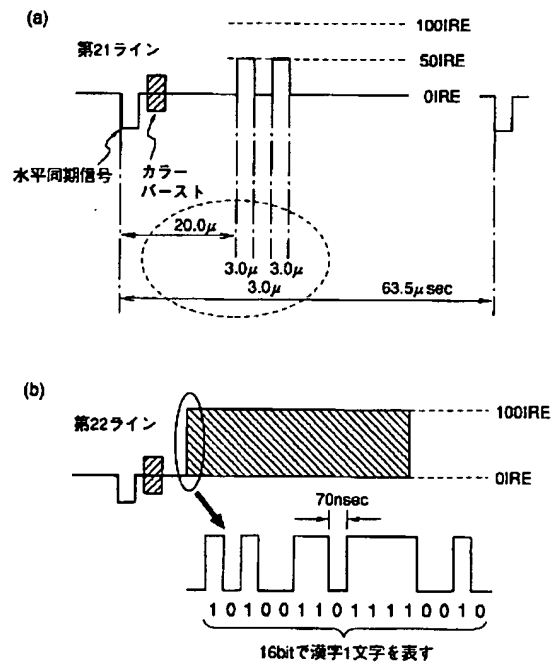
【図2】



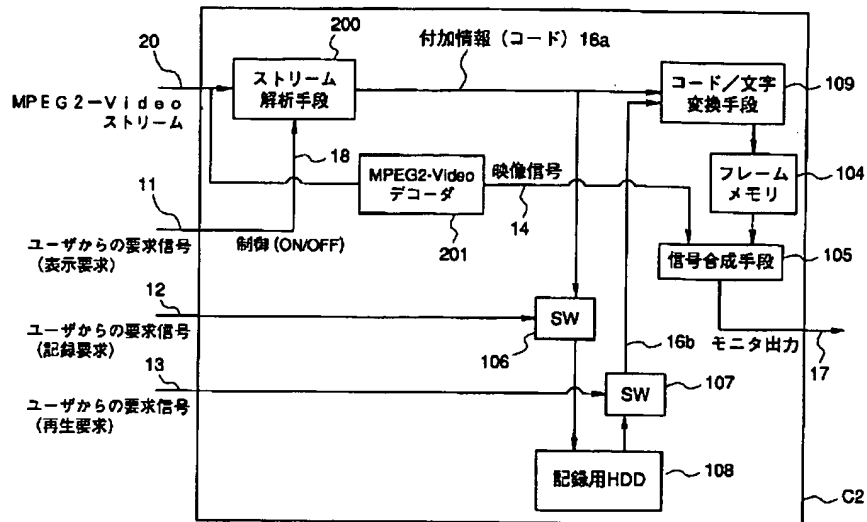
【図3】



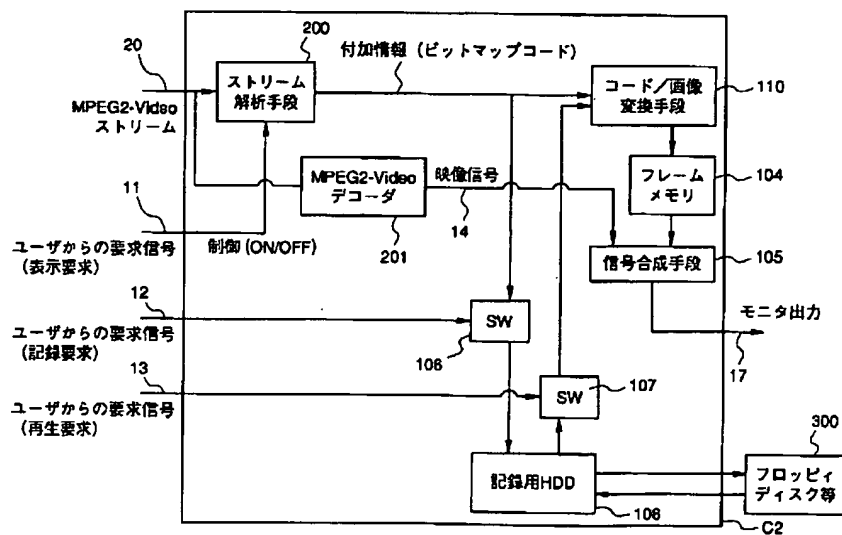
【図4】



【図5】



【図6】



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